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### Re-appointment to the B.T.C.

ALTHOUGH the term of office of Sir Brian Robertson does not expire until September 14, the Minister of Transport & Civil Aviation very wisely has already announced an extension of his service as Chairman of the British Transport Commission for a further five years. In so doing he has eliminated any doubt as to continuity of policy at a time when the need for strong leadership is especially important. There can be no doubt as to the strength of Sir Brian Robertson's prestige and influence. In recent weeks this has increased greatly, largely as a result of his handling of the railway wages dispute. The confidence he everywhere enjoys is of inestimable value at a time when the closest co-operation must exist between Government, Commission, and unions if the decisions resulting from the recently-concluded railway wages agreement are to be implemented. The stable continuity of top-level management in the present railway situation is further emphasised with the reappointment of Mr. J. W.

Watkins as a full-time Member and of Sir Cecil M. Weir and Mr. T. H. Summerson as part-time Members of the Commission. Sir Philip Warter succeeds Mr. F. A. Pope as a part-time Member. This appointment, too, is a wise choice, for by it the Minister has ensured that membership of the B.T.C. is now shared by all six Chairmen of the railway area boards. Sir Philip Warter has served as Chairman of the Southern Area Board since 1955, and has constantly demonstrated his indefatigable interest in and practical approach to railway affairs. In common with the other Regional board chairmen, despite the many calls on his time from his other business activities, he has given his services wholeheartedly to further the interests of his Region. He brings to the Commission proven administrative ability and a sound practical knowledge of management at the highest level of a great organisation. His appointment completes the chain of direct representation on the Commission of all the railway Regions at a time when the closest association of policy is essential.

### The Late Mr. E. I. Froshaug

INTERNATIONAL railway affairs have been bereft of a familiar figure in the passing of Mr. Eilif I. Froshaug, Manager of the Norwegian State Railways Travel Bureau in London. Mr. Froshaug, who was the doyen of the official representatives in the United Kingdom of foreign tourist countries, had devoted more than 50 years of his life to railway and tourist work; 46 of these had been spent in the United Kingdom. The wide scope of his duties included North Sea routes, Norwegian transport companies, and the hotel trade. An important aspect of his work was the establishment of personal contact and the maintenance of friendly co-operation with British travel agents. His likeable personality and wide knowledge of his subject, coupled with long experience, well suited him to the tasks he undertook. Mr. Froshaug had a wide circle of friends in all branches of the travel industry, and his death will bring a sense of loss to many.

### Progress in New South Wales

EXTENSION of electrification to Lithgow, employing electrical equipment and locomotives supplied from Britain, and the resultant improvement in services, are main developments recorded in the New South Wales Government Railways report for 1956-57. This document has been presented by Mr. N. McCusker, Commissioner for Railways, to Mr. A. G. Enticknap, the New South Wales Minister of Transport. It also describes the drive to secure maximum economic development of surplus railway land and simultaneously to increase facilities for the public. Earnings for the year were £78,688,602 and working expenses £75,351,603, an improvement of £2,855,266 on the result for the previous year. £1,000,000 was received from the Government as a contribution towards losses on working of country developmental lines, and £800,000 as a contribution to payments due from the Government Railways superannuation account, making the net receipts £5,136,999. This amount was insufficient by £5,794,288 to meet interest on loan capital, sinking fund contributions, and other statutory charges. Gross capital expenditure was £12,065,803, of which £4,844,943 was for new motive power and rolling stock and £3,800,272 for electrification. Delivery was taken of 39 locomotives, 32 passenger and 116 goods vehicles and orders were placed for additional diesel-electric locomotives.

### Regaining Traffic

THE success of the campaign launched recently by Mr. T. W. Brodie, Acting Commissioner of Western Australia Government Railways, with the object of recovering traffic lost to the road in recent years emphasises the fact that close co-operation is needed between railway managements and the public if traffic is to be regained by the railways and held at an economic rate. The campaign is in the form of a State tour of railway towns by senior commercial officers to sell the rail-

ways to the people. The officers address business people, local authorities, chambers of commerce, and farmers and place the railways case for the fullest possible use of the railway facilities. Particular reference is being made to livestock traffic; much of this is being conveyed by road, and there is no restriction as to conveyance in the producer's own vehicle. The response to this approach has been well received in the areas visited so far. There is no doubt that traffic cannot be regained from competing operators unless the public is made aware of the services at its disposal, a fact appreciated by British Railways which widely advertises its express freight services in the national press.

### Modern "Grand Tour"

THE National Railway Historical Society Inc. of America has organised an unusual holiday tour. Leaving New York on September 8 and returning on October 1, participants will visit railways in Spain, Italy, Switzerland, Germany, France, and England. The introductory letter states that the tour will receive "the special attention of railroad officials, include receptions by the carriers, and the inspection of terminal and other facilities in the various cities en route . . . ample time will be provided for visiting other points of tourist interest." The itinerary has been planned by Mr. Karl W. Helft, a District Sales Manager for Iberia Air Lines. Visits to railway attractions both old and new are planned—for example, in Spain "you will ride a true relic on the metre-gauge line to San Fillieu de Guixols" and in the British Isles "in York . . . you will see the famous railroad museum." Also in Britain, a visit to Swindon takes in "the locomotive construction works of the Western Region, British Railways, which continues to uphold the traditions of its founder, the Great Western Railway." A journey will be made on the Manchester-Sheffield electrification—"prototype of the general conversion programme for Great Britain." The publicity literature of the tour contains helpful information—in addition to the usual details on reservations and hotel accommodation, the average price of a meal and full details of unincluded extras are given to permit approximation of the total cost of the holiday to be made. All information is phrased in clear and direct language in the minimum space. The tour leader, Mr. Everett L. Thompson, has served with the Baltimore & Ohio Railroad for over 28 years and is a writer on railway subjects. The total cost of the tour is \$1,035 each person.

### Hunslet Expansion in Canada

HUNSLET locomotives are found in many countries on main-line and secondary railways, and in industrial plants. They work in most of the Canadian mining districts, where increasing activity and no doubt the reputation of these British products have increased the demand for them. Accordingly a new company, Hunslet Locomotives Canada Limited, has been formed with registered offices at Haileybury, Ontario. It is intended to extend the after-sales service facilities hitherto provided by the Hunslet Engine Co. Ltd. from Leeds in conjunction with its Canadian representation, Lecky Machinery Limited in Eastern and Gordon Russell Limited in Western Canada. Apart from industrial lines, there is much expansion of railways in Canada both in freight traffic and in new lines built, with a corresponding increase in demands for diesel shunters, which are a Hunslet speciality.

### Re-lining Spiral Tunnels

AN important feature of the re-lining operations now in progress in the spiral tunnels on the Canadian Pacific Railway line between Hector and Field, British Columbia, described elsewhere in this issue, is that work is being undertaken without interruption of scheduled train services. When the tunnels were constructed in 1908, only the more unstable sections of rock were supported with a lining, mostly untreated timber, and a total length of 1,206 ft.

was left unlined. Timber lining was completed throughout in 1912-13, but this had deteriorated to such an extent by 1954 that a 10-year programme to re-line the whole length had to be initiated. The various rock formations encountered in the original tunnel excavation have necessitated adaptation of methods to a variety of conditions, and it was originally decided that reinforced concrete could be most readily adapted to the requirements. The methods differ greatly from more recent tunnel lining jobs in this country where pre-cast concrete segments have been used. The alignment and length of tunnels prevent the use of motor-powered equipment except for brief periods because of unsatisfactory ventilation. Most of the work is being performed manually which would be done by machines in normal conditions.

### Standardisation Conference

THE importance of standardisation in mechanical equipment is a major facet of the drive for economy in railway operation. This was recognised at the Fifth Biennial London Conference on Standardisation of Railway Mechanical Equipment on Oversea Railways. The conference was held from May 12 to May 20 under the chairmanship of Mr. R. W. Taylor, Engineer-in-Chief, Crown Agents for Oversea Governments & Administrations. Senior members of the technical staff of that organisation who took part in the discussions were led by Mr. D. C. Brown, Chief Mechanical Engineer. The conference was attended by a representative of the Ghana Railway & Harbour Administration, the East African Railways & Harbours Administration, and the Nigerian Railway. Observers were present from Rhodesia Railways, Nyasaland Railways, and South African Railways & Harbours. The British Standards Institution and industry were also represented. Visits were made to a number of locomotive and allied industrial manufacturers. The meeting of such a senior body of railwaymen provides a stimulant to the railway industry as a whole and the manufacturers in particular. The Crown Agents for Oversea Administration acted as secretariat to the conference.

### Electrification of Lightly Trafficked Lines

THE relative cheapness of converting and operating lines at 50 cycles, compared with other systems of electrification, is reported to have led the French National Railways management to consider conversion of some lightly trafficked lines remote from hydro-electric generating stations. In the Western Region, besides the busy Paris-Rouen-Havre main line, electrification has been discussed of the sections from Le Mans to Nantes, and possibly on to St. Nazaire, and from Le Mans to Rennes, and perhaps further west in Brittany; other lines in Western France also are stated to be under review. Some increase in goods traffic is expected from industrial development of these areas and also perhaps from rises in the prices of fuel oils for road haulage vehicles, or from difficulty in obtaining such fuels. The availability of atomically-generated power no doubt will help. Nevertheless these lines, except perhaps between Paris and Havre, carry little, by British standards, allowing even for passenger traffic to coastal resorts at holiday periods. Work cannot start, however, until electrification is completed of busier sections of other Regions of the S.N.C.F., which will take some years.

### Possibilities of Conversion in Britain

THE fact that electrification is considered in France of railways in what are and will long remain predominantly rural areas devoid of large cities, has a bearing on conversion of rather similar sections of British Railways. Editorial reference was made in our April 18 issue to the proposed electrification of the Southern Region main line between Salisbury and Exeter. This has some affinity with the Le Mans to Rennes section, notably in holiday traffic peaks, though the British line seems to carry a much heavier average passenger traffic. A.c. electrifica-

tion may prove feasible in both cases. That Britain led the way in examining conversion of this category of line is shown by the study made by the Great Western Railway of electrification between Taunton and Penzance, the subject of the Dawson report of 1927, commissioned by the then General Manager, Sir Felix Pole; at that time moreover techniques were much less advanced. In electrifying busy and complex main lines at 50 cycles British Railways do not lag behind, especially in view of their restricted clearances and the very considerable interference from Post Office telephone lines alongside the track.

### Coal-Burning Gas Turbine Locomotive Development

A SERIES of three long-term development tests has now been carried out by the Locomotive Development Committee Bituminous Coal Research Inc., of Dunkirk, U.S.A., on a prototype LDC-Allis Chalmers locomotive-size coal-fired gas turbine power plant. The time during which the unit has been in coal-fired operation now amounts to 3,760 hr.; also an additional 1,250 hr. has been spent with a Houdry unit, bringing the total coal-burning time to 5,010 hr. The plant, which was built in 1951 at the Alco Products Dunkirk works uses as fuel pulverised coal, supplied to the combustors as an aerated pulverised coal mixture. The burnt gases pass through a fly-ash separator before passing through the LDC-Allis six-stage turbine, and a 20-stage axial compressor; it exhausts finally through a regenerator. In the present arrangement the turbine set is coupled to d.c. traction and auxiliary generators. The coal system, including the aerated feed, coal pump, and pressurised pulveriser, performed satisfactorily throughout the latest 1,100-hr. trials, as did also the combustors, fly-ash separators, and turbine. A remarkable decrease in turbine blade wear, compared with previous test runs, was experienced. The reason was the proper functioning of the separator and improved blade materials. Wear rates were between only 0.003-0.009 in. These details are given in the 1957 annual report of the committee, which concludes that despite the lower operating efficiency of the coal-fired gas turbine of 18 per cent, compared with 30 per cent for a diesel, present relative prices of fuel oil and coal continue to favour the former. It is unfortunate that because of the trade recession in the U.S.A., further development work has had to be suspended until more funds are available.

### First All-Aluminium Containers for British Railways

WITH the increasing application of light-alloy materials to railway equipment, it is not surprising that a number of all-aluminium alloy general purpose containers, described on another page, have recently been delivered to British Railways. Although, the builder, Park Royal Coachwork Limited, has previously completed somewhat similar containers for Rhodesia Railways and British Road Services, this is the first batch of general purpose containers employing this form of construction to have been built specifically for British Railways. From the operating point of view, the chief advantage is the reduction in tare weight of some 30 per cent compared with the standard British Railways "B" type container, which it resembles dimensionally. This factor, alone, could economically assist the present all-important drive on holding and increasing freight traffic which can be handled by road-rail methods of conveyance. Other advantages of all-aluminium construction include freedom from the necessity for regular protective painting, and increased strength. One feature of the construction is the incorporation in the design of 13-in. wide tongue and groove extruded alloy planking joined together with a type of cold setting resin cement.

### Sliding Wheel Causes Derailment

THE derailment at Uddingston on June 17, 1957, was inquired into by Colonel W. P. Reed, whose report is summarised in this issue. A wheel, which had been skidding for a considerable distance developed a groove

which caused it to drop sufficiently low to burst the junction trailing crossing. Speed was moderate, as a limit of 35 m.p.h. was in force and being correctly observed. An examiner, who called another to assist him, had to deal rather hurriedly at Carlisle with a defect in some brake rigging, necessitating the blanking off of a vacuum cylinder. They forgot to operate the release valve; and Colonel Reed believes the wheels to have been locked thereafter although they were not seen to be by the examiner at Carstairs, or by any signaller. The Carlisle examiner made not the slightest attempt to excuse his forgetfulness and evade responsibility and Colonel Reed makes no recommendation with respect to it. The report gives some details of derailments caused similarly in the U.S.A. by locked diesel-electric locomotive wheels.

## The Progress of Modernisation

SHORTLY before Parliament rose for the Whitsun recess, the Minister of Transport & Civil Aviation, Mr. Harold Watkinson, replied to questions both on the revised capital investment programme authorised for British Railways and on the economies it is expected to introduce. Neither answer, nor those to the supplementary questions, was reassuring. First as regards modernisation, as already announced, an additional £25 million is to be spent over the two years 1958 and 1959, but it is now clear that this is not additional to the amount planned under the accelerated programme, on which the railways had embarked before last autumn's cut-back. It is additional to the lesser amount to which expenditure was to be restricted. As the amount authorised for each of the two years under the restricted programme was £145 million, the total now to be permitted is £315 million for the two years taken together, as against the restricted total of £290 million. This compares with approximately £300 million which was the British Transport Commission's original estimate for the two years over which the increase is accordingly about £15 million, which the Minister confirmed.

This overall increase is to be welcomed. It should be noted, however, that the original 1958 and 1959 figures were only given after the cuts had been announced, but for which they would probably have been larger. At that time the Regions of British Railways had not yet presented their budgets, and when they did so they exceeded these amounts. This was because the Regions had been able to plan a greater acceleration than had been thought possible. But for the capital restriction the Commission would almost certainly have authorised these larger amounts as up to the autumn, the only effective limitation on the Commission's capital investment programme was availability of national resources, mainly technical staff and productive capacity. Presumably the new expenditure now authorised approximates to the sum total of the Regional budgets; but to ascertain whether this is so a Parliamentary question has been tabled for reply the day after Parliament re-assembles.

Perhaps of more importance than comparison between the planned expenditure and that now authorised would be one with the original expenditure as estimated in the White Paper. On the face of it, this gives more encouraging results. The White Paper expected modernisation to cost £135 million in 1958 and £140 million in 1959, a total of £275 million for the two years. This compares with £315 million permitted under the revised programme and is the satisfactory increase of £40 million. That would mean that the programme is accelerated by that amount, were it not for the fact that its cost has risen by 25 per cent, from £1,200 million to £1,500 million. This no doubt accounts for the fact, announced by the Minister, that there has been no change in the date forecast for the completion of the modernisation plan. It would appear that although expenditure is higher than planned in the White Paper, it is no more than keeping up with the greater cost of the programme. In other words, acceleration has been in expenditure rather than in work.

In all these circumstances it is no wonder that Members

showed some sympathy with the view expressed by Mr. Ernest Davies, in a supplementary question, that it was regrettable that the cuts were made at all. Apparently the final effect, now they are more than restored, is that there has merely been a six to nine months' slow-down in programme planning and commitments. Mr. Watkinson justified the autumn cuts, however, on the ground that the resultant examination of the Commission's position had been useful, implying thereby that neither the acceleration of expenditure on the programme, nor the economies to be sought, would have taken place but for them. This seems to be special pleading, as such an examination could well have taken place without first imposing the cuts, and, in any case, it resulted not from their imposition but because of the railwaymen's wage claim.

As regards economies, many Members of Parliament appeared to share the fears voiced by Mr. George Strauss that the railway service might be severely damaged by the cuts announced by the Minister. While he welcomed "good" economies, he sought an assurance that those announced would not interfere with a "good public railway service." That is the crux of the situation. If the Commission withdraws unremunerative services and closes branch lines, real economies may be effected, but if it also reduces services to a point where it prejudices the provision of an adequate and efficient railway service suitable to users' needs, then they cease to be "economies" in the sense implied: they merely represent a reduction of services provided, or a deterioration in them, and might prove more costly to the Commission in the resultant loss of traffics than helpful in savings made. Unless the types of services required are available and provided at the times and frequencies that suit the convenience of the public who use them, alternatives will be sought. One must assume that the action taken has been neither too hasty nor so inadequately considered that this will result.

### The Advantage of Diplomacy

THE realistic approach adopted by the railway unions during their recent negotiations with the British Transport Commission is reflected in a thoughtful and responsible article in *The Railway Review* by Mr. S. F. Greene, General Secretary of the N.U.R. Under the heading "Pay Settlement—E.C. Decision was Wise One," Mr. Greene showed a sensible appreciation of the facts of transport life at the present time. He defended his committee's decision against a strike by reminding members of his union that, had work stopped, they might have lost anything up to three weeks' work. On return to an almost certainly depleted traffic situation, they might have found redundancy problems impossible to control. Now, as a result of the recent orderly discussions, these are being tackled with care and understanding by both sides and the unions have Sir Brian Robertson's assurance that "the B.T.C. have not lost their sense of responsibility towards their staff."

In sharp contrast are the attitudes of Mr. Frank Cousins and the Transport & General Workers' Union. A similarly sharp contrast may well become noticeable between the outcomes of rail and bus disputes. In the event of a railway strike, Mr. Greene wondered, what would have happened to the traffic? Would traders have found other ways and means of transport? A very pertinent speculation. There are increasing signs that a percentage, uncomfortably high from the busman's point of view and that of London Transport, of Londoners has found alternative means of transport during the past weeks of bus inactivity. There is no doubt that the loss of many of these passengers will prove permanent and that when the strikers eventually return to work they will find that very considerable cuts in services have to be made. It may be that another factor beside that of economy will have influenced such reductions. There is widespread observation as to the extent to which London traffic congestion has been eased by the removal of the cumbersome bus, and the areas of real necessity for bus services have become defined. Like the too-choosey maiden, the busman

has only himself to thank if eventually he is left on the shelf.

It is time to realise that the whole atmosphere of industrial negotiation is changing. Gone are the old days of simple and mainly one-sided hammering between master and man. New industrial techniques, modern outlook and an acceptance everywhere of a basic and constantly-rising standard of living and, above all, a higher standard of general education all combine to make the old-fashioned wielder of mere strength an unsympathetic and slightly absurd figure. This is true of management and of employee to an equal extent. The recent negotiations between the B.T.C. and the railway unions have shown that the skill of the diplomat is effective. That it is essential may be made painfully clear by a negative result, and one at least as disastrous to employees as to management, of the current disagreement between busmen and London Transport.

### London Midland Region Summer Timetable

PRINCIPAL addition to the London Midland Region timetable this summer is the second "Caledonian" service, from Euston at 7.45 a.m. (Saturdays excepted), arriving in Glasgow at 2.30 p.m., and from Glasgow Central at 4 p.m., with a Euston arrival at 10.45 p.m., thus paralleling the facilities provided over the East Coast Route between Kings Cross and Edinburgh by the "Fair Maid" and the "Talisman." Never before has it been possible to leave London in the early morning by rail and have an afternoon for business in Glasgow the same day, nor to leave Glasgow as late as 4 p.m. and be in London the same evening. The extra 5 min. in running, as compared with the existing "Caledonian" service, is due to a second intermediate stop each way in addition to Carlisle; the 7.45 a.m. down will call at Crewe (in 147 min. for the 158.0 miles from Euston, 64.5 m.p.h.), and the 4 p.m. up at Stafford, with a run over the 133.6 miles to Euston in 120 min. (66.8 m.p.h.). The Crewe stop will be to pick up passengers only, with a connection from Birmingham at 8.25 a.m.; but on the up journey passengers will be picked up as well as set down at Stafford, in the latter case with a connection reaching Birmingham at 10.1 p.m.

To keep clear ahead, the 6.40 a.m. from Euston to Windermere will start at 6.35 a.m. and run 5 min. earlier to Lichfield. Further north, the morning Manchester-Glasgow train, which last summer started at 9.30 a.m., will leave at 8.40 a.m., and be accelerated 10 min. to run from Preston to Carlisle in 104 min., so reaching Glasgow 60 min. earlier, at 1.50 p.m. The 9.43 a.m. from Liverpool Exchange will start at 8.57 a.m., and will stop at Carlisle at 11.31 a.m., 64 min. earlier; Glasgow will be reached at 2.20 p.m., an acceleration of 14 min. on present times. In the up direction the 4.55 p.m. from Blackpool Central to Euston, to keep clear of the afternoon "Caledonian," will run from Rugby to Euston via Northampton, giving a non-stop run from that town at 9.51 p.m. to London, with arrival at 11.8 p.m. Also the 3.45 p.m. from Euston to Manchester, which for the past year has been detained 17 min. at Nuneaton to allow the 4.15 p.m. "Caledonian" from Euston to pass, is to have this stop cut to 4 min., and to continue on the slow line and make an additional stop for 10 min. at Tamworth, afterwards resuming its present times.

An additional service of note is that for the first time the "Mid-day Scot" is to run on Sundays also, leaving Euston at 12.30 p.m., calling at Crewe, Carlisle and Motherwell, and reaching Glasgow at 9.30 p.m. In the reverse direction, starting from Glasgow at 1 p.m., the train will have no publicly advertised intermediate stop, and will be into Euston at 9.40 p.m.

All express train times between Runcorn and Liverpool are to be increased by 5 min. because of engineering work; down expresses from London will reach Liverpool Lime Street 5 min. later, and all up expresses will start 5 min. earlier. A new development affecting Manchester is the running, for the first time on record, of through first and second class sleeping cars between Manchester and

Plymouth, southbound on the 12.25 a.m. from London Road (11.50 p.m. on Saturdays), reaching Plymouth at 10.45 a.m., and northbound on the 8.7 p.m. from Plymouth, due in Manchester at 6.18 a.m.; this service actually began on May 5.

On the Midland Division there are to be some substantial accelerations of the Bristol-Birmingham-Derby service. The 8.35 a.m. from Bristol will start 10 min. later, run non-stop from Gloucester to Birmingham, picking up its previous times at Birmingham, and will be extended from Sheffield to York, arriving there at 1.59 p.m., an acceleration of 69 min. in all. The 10.20 a.m. from Bristol to Newcastle also will start 10 min. later, but reach Derby at 1.36 p.m., 4 min. earlier, and York at 3.55 p.m., 18 min. earlier, an acceleration of 28 min. The through Cardiff-Newcastle service will be 11 min. earlier into York, and the "Devonian" 17 min. earlier into Bradford. Finally the 4.45 p.m. from Bristol to York will start at 5 p.m., but recover its previous times by Derby.

In the southbound direction the 7.32 a.m. from Bradford to Bristol will start 8 min. later, but reach Bristol at 1.20 p.m., 10 min. earlier, an acceleration of 18 min. The "Devonian" will start from Bradford at 10.15 a.m., 25 min. later than now, and from Derby at 12.50 p.m., 20 min. later, but will reach Bristol at 3.50 p.m., only 3 min. later than now, entailing an acceleration of 22 min. The 12.32 p.m. from York to Bristol will start at 12.48 p.m., but arrive in Bristol at 6.18 p.m. as now.

Over the principal Midland Division main line the accelerated times introduced in the summer of 1957 are to be continued almost without alteration. Among minor changes the 8.15 a.m. from St. Pancras to Nottingham is to call at St. Albans instead of Harpenden. The 6.33 p.m. from St. Pancras to Derby will arrive at 8.57 p.m., 5 min. later than now; the 6.42 p.m. to Sheffield will start 2 min. earlier and be decelerated 14 min. to Nottingham and Sheffield, arriving at 10.11 p.m.; and the 6.50 p.m. to Manchester, already making the extra stop at Luton introduced after the publication of the winter timetable, now reaches Manchester at 11.5 p.m., 5 min. later. In the up direction the tightly-timed 12 noon from Bradford to St. Pancras will have its schedule eased out south of Derby, reaching St. Pancras at 5.4 instead of 4.57 p.m. The 8.26 a.m. from Leicester only to St. Pancras, which was cancelled shortly after the introduction of the current timetable, remains so cancelled, with the 7.5 a.m. from Sheffield making an additional Leicester stop and covering the 99.1 miles from there to St. Pancras in 99 min.

The recently-introduced even-interval diesel service between Derby, Trent, Nottingham and Lincoln now appears in the timetable; for the most part departures are at 20 min. past the hr. from Derby and 55 min. past from Nottingham, with a 59 min. run from there to Lincoln, calling at all stations; previous overall times of stopping trains, between 2 hr. 2 and 2 hr. 17 min., are reduced to 94 min., and a greatly increased service is given. In the reverse direction departures from Lincoln are at 10 min. past the hr. There is a similar expansion, with diesel units, of the Leicester-Trent-Nottingham service, as nearly to even hourly intervals as the express passenger service will permit, with semi-fast trains taking 45-48 min., and stopping trains 50-52 min. A similar very considerable expansion and acceleration is taking place of the service between Leicester, Nuneaton and Birmingham. Here again even-interval times have been adopted as far as possible, with departures from Leicester at 30 min. past the hr., and from Birmingham at 15 min. past the hr.; all stations trains are allowed 81-83 min. westbound and 76-77 min. eastbound, in some cases having been accelerated from 17 to 25 min.

This review of the summer timetable due to come into force on June 9 has been made without any information as to what principal trains are to be withdrawn, or, if new, not placed in service, as one of the economy measures now being taken by British Railways. As we go to press, our information is that most important trains will run as planned.

## American Railroads in Dire Straits

**L**AST month the Association of American Railroads issued a statement of railway revenues and expenses for January and February, which showed that nearly one-third of its member companies worked at a loss. Freight revenue decreased by 12 per cent and passenger revenue by 13.8 per cent, while operating expenses were reduced by only 6.2 per cent. The operating ratio rose from 79.7 to 84.9 per cent and earnings, before charges, fell from \$83.7 million to \$40.6 million, or by 67 per cent. The railroads were left with a net income of \$8 million against \$93 million at the end of February, 1957.

The plight of the Eastern railways, operating 50,700 miles of road in a highly industrial area, was lamentable. Twenty companies out of 41 had deficits, the Pennsylvania being \$7,010,400 on the wrong side and the New York Central \$9,680,600. The Baltimore & Ohio cut expenses by 16 per cent and escaped with the loss of half of its net railway operating income. The Western District and the Southern Region came off better, only 14 of 65 companies having deficits though the Santa Fe, Burlington, Louisville & Nashville, Rock Island, and Illinois Central had much reduced earnings. Passenger revenue was down 15 per cent in the Western District, all the companies whose "streamliners" have been a picturesque feature of American railroading in recent years sharing in the loss of \$5,251,000.

The A.A.R. report on the transport situation at the beginning of April does not indicate that the traffic conditions are likely to improve soon. In 15 weeks to April 12 wagon loadings numbered 8,011,880, a decrease from 1957 of 1,933,280, or 19.4 per cent and from 1956 of 2,395,754, or 23 per cent. In the month of March the average daily surplus of wagons was 110,000 and on April 1 wagons needing repair accumulated to the number of 106,370, or 6.1 per cent of total stock; a year earlier the number was 70,221, or 4.1 per cent of stock. There has been so little work to do that in January a serviceable wagon moved on an average 829 miles per day—100 less than in January, 1957.

The intensity of the industrial recession in the U.S.A. is evident from the decline of coal output for 14 weeks to April 5 by 30,400,000 tons, or 22.5 per cent. On March 1 stocks of coal represented a 60 days' supply, while consumption to that date was 8,300,000 less than in 1957. In the first quarter of the year coal tonnage shipped overseas amounted to 10,586,000 tons, a decrease of nearly 4,400,000 tons, or 30 per cent, affecting the coal roads in the Pocahontas Region. Altogether the railroads lost the haulage in 15 weeks of 394,920 wagon loads of coal, nearly 20 per cent of last year's carryings.

Stocks of iron ore are also heavy and consumption was about a third less than a year ago. Over 15 weeks ore wagon loadings were about 35 per cent fewer. The steel plants are so slack that navigation on the Great Lakes had not begun recently. Meantime, less than half the tonnage of coke carried in 1956 and 1957 is passing by rail. Another setback to the railways in March was the smaller volume of export and coastal freight, apart from coal and coke, handled through all ports; 37,449 fewer wagon loads were dealt with, a decrease of 32 per cent.

But perhaps the most serious change was the loss of miscellaneous and manufactured commodities, together with less than wagon load traffic, all high-rated goods. Compared with 1957, such loadings were 1,206,700 fewer, or fully 20 per cent, and were 1,567,100 below the 1956 figure, a fall of nearly 25 per cent. Even loadings of road trailers on flat wagons were not maintained, though much money and time have been spent in organising these new services. In 14 weeks to April 5 the number of flat wagons loaded was 62,470 against 65,120 last year—a decrease of 2,650, or 4 per cent.

Clearly the railroads are now in a state of emergency. The general slump in business has accentuated long-standing difficulties due to government policies which keep railway earnings abnormally low, while favouring road, water and air competitors. The railroads are now pressing for reforms to remedy the unequal treatment.

## LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

### Scottish Region Summer Services

May 19

SIR,—In the report of the Scottish Region summer passenger services which begin on June 9 and to which you referred in your May 2 issue, I notice that you mention that the 2.36 p.m. from Edinburgh will miss the afternoon "Caledonian" from Glasgow at Carlisle.

Very careful consideration was given to the question of re-timing the 2.36 p.m. from Edinburgh to Carlisle to run earlier to form a connection with our 4 p.m. "Caledonian" from Glasgow, but unfortunately it was not possible to make this connection without affecting a very large number of schoolchildren and other local users. We had, therefore, no alternative but to leave the local train from Edinburgh to Carlisle at its present timings.

Yours faithfully,

H. M. HUNTER  
Public Relations & Publicity Officer

British Railways, Scottish Region,  
179, Howard Street, Glasgow, C.1.

### Timber Sleepers

May 19

SIR,—In your May 16 issue, on page 560, you state that "The uneven distribution of timber suitable for sleepers assures the economic use of some form of concrete sleeper in many countries."

In view of the continued use of timber sleepers in this country on a very extensive scale and the fact that no difficulty is experienced in the supply of suitable sleepers and crossing timbers, we can only conclude that your remarks are not related to conditions prevailing in the United Kingdom.

Experience has shown that timber sleepers are both economical and efficient and it is surely significant that of 110 million sleepers currently in use on British Railways 108 million are timber.

Yours faithfully,

H. RICHARDSON  
Industrial Relations Officer

Timber Development Association Limited,  
21, College Hill, E.C.4

[No disparagement was intended of timber sleepers in the United Kingdom or elsewhere. Processing methods have made possible the use of timber sleepers in some tropical countries, where formerly they could not be used because of termites and the high incidence of timber decay.—ED., R.G.]

### Cross-Channel Services

May 20

SIR,—The problem of the Newhaven/Dieppe service is that of catering for peak traffic and making reasonably full use of ships and trains in off-peak months. As at present timed the day service duplicates services via Calais and the lower fares which used to be associated with this route are offset by very high port dues.

An innovation would be a 5.30 p.m. departure from Victoria with a 1.30 a.m. arrival, not too late for hotels, in Paris. Northbound, a very late arrival in London is ruled out by the cessation of local transport and the early closing of hotels; departure from Paris should be at 7.15 a.m., as French hotels do not object to an early departure, with arrival in London at 3.15 p.m. Timings in England would be one hr. earlier in winter, because of the difference in time. This would allow one ship to work the service. The

Holyhead-Dun Laoghaire service is so timed that it can be operated by one ship when required.

It was at one time proposed to withdraw the Southampton/Havre service. Havre and Rouen can both be reached from Dieppe. A new service could be inaugurated, instead of Southampton/Havre, between Southampton and Cherbourg, which latter port is very hard to reach from Britain. At the same time the Southampton/St. Malo service could be suspended, the journey from Cherbourg to St. Malo and beyond being made by rail.

Yours faithfully,

R. G. R. CALVERT

45, Woodwaye, Oxhey, Herts.

### Smoking in Trains

May 21

SIR,—I refer to the editorial note in your May 9 issue. There is wide variation in the amount of non-smoking accommodation provided by the Southern Region on its suburban services and by the Underground. The former gives only about one-sixth to non-smokers; the latter is more in line with modern trends by providing one-third of the train space for those who do not wish to smoke or are adversely affected by smoke.

The Southern Region, moreover, arranges all the non-smoking compartments in one coach of a four-coach unit, which means that about 75 per cent of people on a crowded platform have no choice when the train arrives. The argument may be that the other three coaches generally are open saloons. But the Underground allots open coaches to non-smokers; so why cannot the Southern Region?

Yours faithfully,

S. E. LORD

60, Fairway, Carshalton, Surrey

### Diesel Locomotive Working

May 19

SIR,—Experience in the U.S.A. of diesel-electric operation has shown that, whilst in the early days of changing over from steam to diesel-electric traction it was generally possible to replace two steam locomotives by one diesel, as implementation of the programme advanced the ratio changed so that in the final stages replacement was on a one-for-one basis. To exploit fully the availability of the diesel, several companies abandoned the divisional allocation of motive power and organised it on a system (all-line) basis.

One wonders whether decentralisation in its present form on British Railways is ideally suited to this intensive diagramming of locomotives which transcends the Regional boundaries. This is not to deny the many advantages of decentralisation; but are the "lines" forming the re-organised Eastern Region, for example, of sufficient potential traffic density to justify separate treatment for diagram purposes? British Railways, although of high mileage and density, are territorially relatively small, and it seems that a supra-Regional diagramming authority, certainly for diesel-electric working, is not only desirable but practicable.

There are manifest advantages in the traffic organisations now being set up; but it would be a great pity if rigidity of outlook precluded much-needed modifications to the organisations which should provide scope for development of new techniques.

Yours faithfully,

G. F. THOMLINSON

Attimore Hall Gatehouse,  
Welwyn Garden City, Herts.

## THE SCRAP HEAP

### No Discrimination

"Lift available for invalid passengers and staff."—Notice on Bath Spa Station platform.—"Peterborough," in "The Daily Telegraph."

### "West-End Terminus"

(See our March 28 issue)

**OAKS DAY.**—EPSOM for 1s. 6d., from London-bridge or Pimlico Terminus, up to 9.30 a.m.

**EPSOM RACES.**—On the Oaks Day (to-morrow). **SPECIAL EXPRESS TRAINS** will leave the Pimlico Terminus at 1.30 p.m., and the London-bridge terminus at 1.45 p.m., precisely, arriving at Epsom in time for the race.

**OPENING** of the WEST-END route to BRIGHTON, Eastbourne, Hastings, Worthing, and Intermediate Stations. **TRAINS** now run between the above places and the new Pimlico Terminus, at the foot of the new bridge at the bottom of Sloane-street.—From "The Times," May 20, 1958.

### Beware of the Hounds

With the closing of more branch lines planned, there is a danger that we may soon see the last of an old English fox-hunting custom, involving 5s., mentioned by the M.P. for Nantwich, Mr. Grant-Ferris, in a recent House of Commons debate. He spoke about the branch line between Kemble and Tetbury, in Gloucestershire . . . where hounds sometimes get on the line and impede the "Tetbury Typhoon," as the

train is called: "Drivers are always careful to stop whenever the Duke of Beaufort's hounds are about on the line, and many times we have slipped a driver 5s. for his kindness in that respect." . . . One wonders how the Russian robot locomotive which, according to Moscow, can be driven better without human aid than by the most experienced engine driver, would cope when it found the line beset by a pack of hounds in full cry.—From "The Manchester Guardian."

### South American Railway Stamps

We are indebted to Brigadier R. Gardiner, C.B., C.B.E., for the stamps reproduced in the accompanying illustration. The Peruvian issue of 1951 commemorates the opening of the Government Railway connecting the Southern Railway, owned by the Peruvian Corporation Limited, with the then new port of Matarani. Although Government-owned, this line is worked by the Southern Railway. The stamp depicts locomotive No. 80 and a train of the Southern Railway. The Bolivian stamp is one of a set of five issued on the occasion of the opening in December, 1957, of the railway between Yacuiba, in Argentina, and Santa Cruz de la Sierra, in Bolivia.

### Official Nicknames for Railways

Except for the London, Brighton & South Coast, which seems to have fostered the use of the terms "Brighton Railway" and "Brighton Line,"



Peruvian and Bolivian stamps commemorating openings of new lines

British railways have never encouraged the public to use shortened forms of the official railway names. In contrast, shortened or alternative names and even nicknames are used more or less officially by many U.S.A. railways; indeed, some of the full, official names are probably unknown to users of the railways concerned. Examples are Burlington (Chicago, Burlington & Quincy); Cotton Belt (St. Louis South-western); Frisco (St. Louis-San Francisco); Great Western (Chicago Great Western); Katy (Missouri-Kansas-Texas); MoPac (Missouri Pacific); Nickel Plate (New York, Chicago & St. Louis); North Western (Chicago & North Western); Q (Chicago, Burlington & Quincy); Santa Fe (Atchison, Topeka & Santa Fe); and Soo Line (Minneapolis, St. Paul & Sault Ste. Marie).

### Summer Prospect

Don't worry about the sceptic scorner,  
Who doubts that summer's just round  
the corner

And takes the rigours and risks of May  
As phenomena which have come to  
stay;

He finds no charm in the cuckoo's tune  
Nor any hint of the joys of June.  
But railmen, reading 'tween the lines,  
Can easily recognise the signs

As many a coach comes out of hiding  
In some remote, sequestered siding,  
To take the eager, holiday hosts  
To Continent, countryside, and coasts.  
The summer season will soon be on  
And it's coats off now till it's come and  
gone.

And, if economy's dark design  
Insists on closing my own branch line,  
We shall, accepting what fate ordains,  
Run bus excursions to see the trains.

A. B.

### Exhibition of C.I.E. Rolling Stock

(See last week's issue)



Goods locomotive of the former Great Southern & Western Railway (now part of Coras Iompair Eireann) built at Inchicore Works in 1880, exhibited during the visit to Inchicore of the Institution of Locomotive Engineers

## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### INDIA

#### Electrification of Sealdah Division

Work on electrification in the Sealdah Division of the Eastern Railway is making good progress. The survey of the Ranaghat section has been completed; considerable progress has also been made with the survey of the Bongaon, Diamond Harbour, and Budge Budge sections.

Slewing of tracks and expansion of seven bridges on the Ranaghat section have been taken in hand. Overline footbridges at Barrackpore, Naihati, Dankuni, and several other stations are being rebuilt. Plans are simultaneously being examined for building three new stations at Beliaghata, Park Circus, and Gariahata.

#### All-India Passenger Timetable

It is not proposed to discontinue the publication of the "All India Time Table" in English, according to the Deputy Minister of Railways, Mr. Shah Nawaz Khan, in a written reply to a question in Parliament.

#### Whistle Boards at Level Crossings

Provision of whistle boards at all unmanned level crossings, as recommended by the Accident Reviewing Committee is being carried out by the railways according to a programme.

#### New Through Carriage Services

Through services reported as recently introduced include a composite coach daily between Jubblepore and Ferozepore, via Katni, Bina, Agra, and

Delhi, also a third class coach daily between Poona and Bezwada via Wadi, Secunderabad, and Kazipet. The Jubblepore-Ferozepore service is over the former Great Indian Peninsula (now Central) Railway to Delhi, thence over the former North Western (now Northern) Railway; the Poona-Bezwada coach is worked over the former G.I.P. to Wadi, thence over the former Nizam's State (now also part of the Central) Railway.

### NEW SOUTH WALES

#### New Sydney Station

It is reported that work is to be resumed on the new Chalmers Street Station adjacent to the Central Station in Sydney. Scarcity of funds stopped work from time to time since it began in 1948.

The new station is part of a scheme to construct two additional tracks from Sydenham to Chalmers Street, and thence continued underground to Town Hall Low Level and the new underground station at Martin Place, on which work has been suspended.

Completion of the two new tracks, it is stated, between Sydney and Sydenham would facilitate the working of Illawarra and Bankstown electric services, as the existing four tracks are nearing saturation point.

#### Building Over Railway Lines

Mr. N. McCusker, Commissioner for Railways, has stated that plans are being considered for the construction of

large buildings over railway lines at 11 different centres in Sydney. Large-scale projects are already under way at two stations. At Hurstville, an eight-storey shopping centre is being built. Also contemplated is the construction of a substantial car park building over the lines near Sydney Central Station.

### WESTERN AUSTRALIA

#### Bid to Regain Traffic

Mr. T. W. Brodie, Acting Commissioner of Railways, has launched a campaign with the object of recovering traffic lost to the road in recent years. The campaign takes the form of a State-wide tour of railway towns by selected senior commercial officers to sell the railways to the people.

The officers address business people, local authorities, chambers of commerce, and farmers, and place the railways' case for the fullest possible use of the railway facilities. They outline measures the Department is taking to protect goods in transit, education of staff in the handling of goods, and so on.

Particular reference is being made to livestock traffic, much of which is being conveyed by road, and on which there is no restriction on the conveyance in the producer's own vehicle. Emphasis is being placed on faster transit, night transit, and later loading times, also the fact that stock agents and others have stated publicly that stock travels better by rail than by road.

The response to this approach has been well received in the areas visited so far. At public meetings and in private interviews, people have been encouraged to air any complaints against the service given, but these have been relatively few. Minor matters such as repairs to stock yards and station approaches have been mentioned and have often been given attention on the spot.

### UNITED STATES

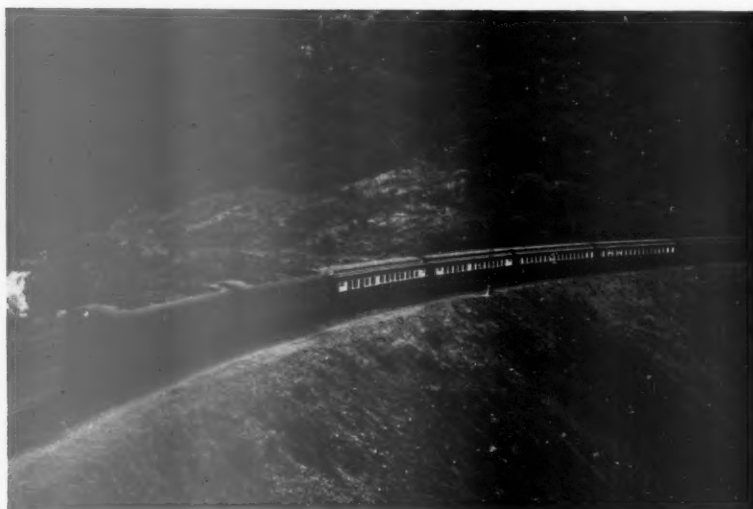
#### February Deficit

In the month of February, Class I railways, according to the Association of American Railroads Bureau of Railway Economics, reported a total deficit of approximately \$9,000,000 after the payment of interest and rentals. Of these railways 42 failed to earn their interest and rentals during the first two months of 1958. In the 12 months which ended in February, the rate of return had dropped from 3.95 to 3.05 per cent as compared with the previous year.

Not all U.S.A. railways are in this position, however. In its annual report for 1957 the Norfolk & Western Railway for the fourth successive year

### Electrification in South Africa

(see our issue of May 9)



The "Orange Express" double headed by two 2,000-h.p. type "5E" English Electric locomotives passing through Shongweni Gorge on the Natal electrified system of the South African Railways

showed an increase in its earnings per share of common stock, notwithstanding the fact that taxation had risen more than proportionately during the same period. The income from all sources totalled \$265,310,947, an all-time record, and the total freight handled, measured in ton-miles, rose by 3.8 per cent as compared with 1956. By far the biggest item in Norfolk & Western freight revenue, of course, is from the carriage of bituminous coal, the revenue from which rose from \$152,544,453 in 1956 to \$164,310,762 in 1957.

### Three New Classification Yards

Within the last two or three months, three new important classification yards have been completed by different railways and opened for traffic. At Cicero, Chicago, the Chicago, Burlington & Quincy new yard is in service; its cost was some £1,430,000. The Robert R. Young yard at Elkhart, Indiana, a much larger project, costing £5,000,000, has been undertaken by the New York Central, and the one at Corwith, Chicago, the Santa Fe has also opened a third new yard.

## ARGENTINA

### Underground Railway Commission

To promote the building of underground railway lines, the Mixed Commission for Underground Railways has been set up under the chairmanship of Mr. Pedro Gervasio Fleitas, General Manager of the Buenos Aires Transport Executive.

## JAPAN

### Railway Modernisation Plan

As part of its five-year improvement and modernisation plan, the National Railways intend to convert the present 3-ft. 6-in. gauge track to standard

gauge (4 ft. 8½ in.). Some £597,000,000 has been budgeted for the five years, but a large part of this will be spent on renewing or modernising locomotives and passenger and freight equipment. Some 1,040 miles of track, including the Sanyo line from Osaka to Moji and certain suburban lines, will also be converted to electric operation.

## BRAZIL

### Ceara-Pernambuco Connection

The first through train between Ceara and Pernambuco left Fortaleza recently for Recife. There are two trips a week; the journey takes two days with an overnight stop at Souza.

### Wagons from Japan

A first consignment of 10 wagons, built by Fuji Heavy Industries and costing U.S.A. \$27,778 each, has been delivered from Japan. A second shipment of 40 is scheduled. This is stated to be the first order for wagons placed in Japan since the war.

## FRANCE

### Rail Connection to Orly Airport

Work began recently on a rail connection from Belle Epine, on the electrified line to Massy-Palaiseau, to Orly Airport, by which it is intended to give a frequent through service from Paris Quai d'Orsay. Civil engineering works involved flyovers at Plaine de Vitry and the approach to Orly. At present local and main lines cross on the level near Paris Austerlitz, but the increased service will necessitate alterations in track layout. At Massena, Ivry-sur-Seine, and Vitry-sur-Seine stations the local lines, with island platforms, will remain in the centre between the through lines, but at Choisi-le-Roi on the outside. At the junction signalbox beyond they will, with another flyover,

bear away towards Belle Epine and Massy. The flyover at the approach to Orly will avoid the freight lines. It is intended that there shall always be an electric train for Paris Quai d'Orsay waiting at the airport station.

## SPAIN

### Electric Suburban Service

Electric working commenced on April 11 between Barcelona and Granollers, an 18-mile suburban section of the main line from Barcelona to the French frontier at Cerdère. With this conversion, electric suburban services now exist on each of the lines radiating from Barcelona.

## WESTERN GERMANY

### Hamburg S-Bahn Electrification

The extension of the Hamburg S-Bahn electrification from Berliner Tor to Bergedorf, on the third rail system, will be brought into use on June 1. Until the flyover at Berliner Tor is completed, passengers for the Bergedorf line will change at Berliner Tor to and from the existing electric line. The Bergedorf extension was described in an article on the Hamburg suburban services in our issue of August 3, 1956.

## HUNGARY

### Diesels for China

A long-term trade agreement with China covering the years 1959-62 is intended to provide Hungary with raw materials in exchange for industrial goods. Amongst the latter, it is reported, are to be diesel multiple-unit trains, railcars, and engines, hydro-electric generating plant, machine tools, and telecommunication equipment.

## Publications Received

*Father of Railways: the Story of George Stephenson.* By O. S. Nock. Edinburgh: Thomas Nelson & Sons Ltd., Parkside Works. 9½ in. × 7½ in. 84 pp. Illustrated. Price 10s. 6d.—This is the sixth in a series of short illustrated biographies, and the first concerned with an outstanding figure in transport. The story is told in a straightforward and readable way. Within the limits of a small volume it has not been possible to give more than a broad outline of George Stephenson's early struggles against adversity and of the success that crowned his later years.

*International Union of Railways: Office for Research and Experiments (O.R.E.) Bulletin for January, 1958.* Published for the U.I.C. by the O.R.E. at Utrecht. 11½ in. × 8 in. 25 pages. Illustrated. No price stated.—This issue gives the results of the competi-

tion instituted by the O.R.E. for the purpose of arriving at the most satisfactory mathematical analysis of the difficult problem of "hunting" of vehicles, for which three prizes were awarded last year. There are also articles on the behaviour of pantographs and overhead equipment at high speed, comparisons between various forms of traction, determination of dynamic forces in bridges, protection of metals and metallic structures, and control of diesel engine lubrication and performance.

*Eastern England.*—British Railways, Eastern Region, has issued an illustrated folder "Eastern England" obtainable free from principal offices and stations, depicting some of the more attractive holiday resorts and places of interest in the counties of Essex, Suffolk, Norfolk, Lincolnshire, Cambridgeshire, and Huntingdonshire. There is a coloured photographic reproduction of each place mentioned, and a coloured

pictorial map showing how the area is served by the Great Northern, Great Eastern, and London Tilbury and Southend Lines of the Region. Brief information is given as to fares and so on. The standard of production of the folder is high.

*Bon Voyage. S.N.C.F. General Information, 1958.*—This year's handbook of travel information, valid from June 1, obtainable free from French Railways Limited, 179, Piccadilly, W.1, is well up to the high standard of these publications. Besides particulars of passenger fares, train accommodation, and so on, particulars are given of "car/sleeper" trains and self-drive car hire facilities at stations. These and other features of travel on the French National Railways, such as reclining chair cars and accommodation in "Trans Europe Expresses" are depicted in the well-chosen photographic illustrations.

## Seventeenth International Railway Congress

### Long-Welded Rails

#### *Methods of welding long rails: equipment for transporting, laying, and fixing*

THE subject of Question 2 to be considered by the International Railway Congress in Madrid later this year, is the comparative study of methods of welding very long rails. The reporter on the answers to this question is Mr. F. Jackson, Assistant Chief Civil Engineer (Maintenance), South African Railways & Harbours. Replies received cover practice in Great Britain, South Africa, New Zealand, Australia, Sweden, Japan, and the U.S.A.

In most of these countries the use of long rails is largely experimental and no definite policy has been reached as to the length of section to be laid with them. The largest total length exists in the U.S.A. where 716 miles have been laid. In general the maximum speed allowed over long-welded rails is the same permitted on lines with rails of normal length, and the gross daily tonnages over the most important sections show that long rails are being used on some of the busiest lines.

Wood, steel, and concrete sleepers are being used with long-welded rails, and their numbers vary from 1,240 to 1,920 per km. Wood seems to be the most widely used, and steel only in South Africa. Methods of fastening the rails to the sleepers include dog spikes, elastic spikes, clips and bolts, and cast iron chairs with keys. In all cases crushed stone is used for ballast.

#### Methods of Welding

Electric arc, thermit, oxy-acetylene, and flash-butt methods of welding have all been used by the administrations, but preference now seems to be for flash-butt welding. In general, no special joints are used for expansion, though where the rail is not rigidly held to the sleeper, rail anchors are used to prevent expansion. In some cases, special splice joints which allow for expansion are being used. Standard suspended joints with normal fishplates are used in most cases at the ends of long welded rails, but in some cases special splice joints are employed.

With one exception long-welded rails are considered to give both better running and a decrease in maintenance costs. Mr. Jackson does not state which administration disagrees with this view, but the one railway considers a medium length welded rail to be a better solution than the long-welded rail.

The most favoured method of manufacturing long-welded rails is by flash-butt welding in the depot into transportable lengths and then by thermit welding into long sections on site. Gas welding, however, is also used very successfully on the Japanese National Railways.

Where steel is added to the weld, as

in the thermit and gas method, it is of such a composition as to ensure that it is as near as possible to that of the parent metal. This ensures that hollow surfaces or bumps do not appear on the running surface near the welds after a certain length of time. In the case of flash-butt welding nothing is added and generally the welded area is slightly harder than the parent metal.

Thermit welds are not heat-treated. Gas pressure welds are annealed and both preheating and postheating has been carried out in the case of electric arc welding. Seven railways use the flash-butt process. Of these four anneal and three do not anneal. It appears from recent tests that heat treatment of flash-butt welded joints is perhaps unnecessary.

Theoretical considerations do not place any limit on the length of the long-welded rails provided that curves, gradients, roadbeds, and so on place no restrictions on their use. Practical considerations, however, such as space available at the welding depot, and maximum permissible length of train, limit the length of shop welded rails. Lengths vary from approximately 40 m. to 500 m. There is no definite conclusion as to the ultimate practical length of long welded rails, but most railways appear to favour a length of 800 m.

In practice, rails are being laid on curves as sharp as 400 m. radius on 4-ft. 8½-in., and 800 m. on 3-ft. 6-in. gauge. Experiments and calculations have shown that long welded rails can be laid on sharper curves provided the railbed is well consolidated.

Expansion devices at the end of long-welded rails are not used in the U.S.A., but the number of rail anchors is increasing. Other railways are using expansion devices; but in the opinion of the reporter there is still insufficient information to justify their use. Experience in the U.S.A. seems to show that an expansion joint is unnecessary provided the stress in the rail is adequately held by sufficient rail anchors and sleepers at the end of the rails. Where expansion joints are used, the long-welded rails are destressed once a year by loosening and refastening when the temperature is in the region of 20° C.

#### Laying

The administrations that have experimented with concrete sleepers for long-welded rails prefer them to other types because the greater weight increases resistance to buckling of the track. Wood and steel sleepers are, however, being used extensively without trouble. Generally the sleeper spacing is the same as that for conventional

rails. Tests have shown that steel and concrete sleepers are more resistant to buckling than wood sleepers, but in practice the factor of safety used is sufficient to render any type safe on a well consolidated roadbed.

Because of the introduction of long rails three out of 15 railways in the U.S.A. have increased the width of shoulder ballast from 125 mm. to 254 mm. Managements in other countries consider that the width of shoulder should be 400-450 mm., but that no advantage is to be obtained by increasing it to more than 450 mm. U.S.A. railways generally have larger sleepers closer spaced, and their track therefore resists buckling better than do others.

Most American administrations do not favour the use of welds on site. Rails are usually shop-welded into final lengths of about 450 m. Other railways are still experimenting with long shop-welded rails and a few site welds, or a short shop welded rail with a large number of field joints. British Railways are experimenting with site welded prefabricated track.

#### Mobile Depots

Use of mobile depots, with consequent reduction in the distance long-welded rails have to be transported, will, in Mr. Jackson's opinion, probably affect the method eventually adopted.

The adoption of the shop-welded practice by U.S.A. railways is influenced by the fact that renewals of rails and sleepers are not normally carried out at the same time and the shop welds are more reliable than those performed on site.

The final fastening down of long-welded rails is usually done at approximately the mean of the annual maximum variation temperatures for the area concerned. The heating of rails by artificial means has not yet been tried.

Only the American Railway Engineering Association and the Japanese National Railway have attempted to assess the monetary saving arising from the use of long welded rails. The A.R.E.A. gives an annual average figure of \$600 a km. for savings caused by lower maintenance costs; longer life of rail—estimated to be 29 years as against 22 years previously; and extension of complete repacking cycle from five to seven years.

The Japanese figures of estimated cost a year per km. given in yen are: rails welded in depot, 1,578,410; rails welded on site, 1,558,090; standard rails, 1,600,760. The figure takes into consideration saving in maintenance, but not longer life from long welded rails compared with standard rails.

## Re-lining Spiral Tunnels

*Ten-year programme to re-line two single-track Canadian Pacific Railway tunnels*

THE original main line of the Canadian Pacific Railway between Hector and Field, British Columbia, some 130 miles west of Calgary, had almost three miles of 1 in 22 grade, decreasing to 1 in 25 and 1 in 29 for the remaining distance of one mile.

The unsatisfactory operating characteristics of this section of main line, with its severe limitation on train loads, warranted a substantial expenditure for improvement. This was accomplished by constructing two spiral tunnels in 1908. The line traverses the valley three times, grades are reduced to 1 in 45, and length of track increased to eight miles. The tunnels are on 10 deg. curves and each tunnel turns through an angle of about 233 deg. Their combined length is 6,176 ft.

### Rock Formation

The rock formation of the two mountains is similar, consisting mainly of a crystalline limestone of a distorted nature with numerous stratifications of soft friable rock varying in some places from nearly horizontal to almost vertical and in other locations from normal to almost parallel to the direction of the tunnel centre line. The hardness of the rock varies every few feet and water seepage adds to the difficulties of construction and maintenance.

At the time of the tunnel construc-

tion, only the more unstable sections of rock were supported with a lining. Concrete portals with short sections of concrete lining, totalling 484 ft., were provided. A total length of 4,486 ft. of tunnel was left unlined and only 1,206 ft. were lined with untreated British Columbia fir timber.

It soon became evident, however, that a lining would be required throughout the full length of the tunnels to ensure safe and uninterrupted railway operations. This work was undertaken in 1912 and 1913 again using untreated British Columbia timber.

From 1926 to 1938, various sections of the tunnel linings were reinforced over a length of 526 ft. with timber sets placed inside the original lining where clearance was adequate. Lagging with cordwood packing were added along the walls as required to retain loose rock.

A detailed inspection carried out in 1954 indicated that the timber had deteriorated to the extent where its replacement was necessary. Pressure of loose rock on the tops and sides of many sections of timber lining indicated that the timbers, weakened through age, would soon be unable to withstand the loads. The best sections of lining were estimated to have a remaining life of about 10 years, and in view of the time required and ex-

penditure involved, it was decided to spread the work over this period of time.

### Reinforced Concrete Lining

Due to the various rock formations encountered in the original tunnel excavation, the new lining would have to be tailored to suit a variety of conditions. After consideration of several types of linings which could be used, it was decided that reinforced concrete could be adapted to the requirements.

Where sidewalls and ceilings are relatively stable, it was possible to remove the timber lining and apply a thin layer of gunite over the exposed rock in the roof. A simple system of small reinforced arch ribs, at about 5 to 6-ft. centres, was then placed by the gunite process with a mesh reinforced gunite layer over the intervening areas of the roof. No attempt was made to maintain a uniform height of ceiling although the ribs were kept above the minimum outline.

Tunnel lining through loose and unstable rock is more substantial to support the heavier loads. Forms are constructed between existing posts, reinforcing installed and concrete poured up to the arch springing. Arch reinforcing is then placed in position and ribs gunited. Timber sets are subsequently removed, wire mesh installed

(Continued on page 627)



Section of spiral tunnels, showing untreated timber lining installed in 1912-13



Timber sets being removed from tunnel roof before wire mesh reinforcement is installed

## New Signalling and Remote Control at Frankfurt

*One signalbox controls station and outlying junctions with facilities for automatic selection of routes from train describers*

THE meeting point of the Rhine and Main valleys is also a great railway interchange area in which numerous important routes converge, roughly in the form of a figure of eight, in the centre of which is Frankfurt. Here the large main passenger station was built in 1888 and enlarged in 1912 to its present size of 24 platforms, with carriage and locomotive sidings and nearby goods yards. In terminal form, it is excellently placed from the passenger's point of view; but it necessarily involves much train reversing and shunting of locomotives and vehicles in dealing with the many international and internal express trains passing through the city, besides a considerable and growing business traffic with heavy peak periods.

Daily platform user has increased from 780 trains in 1937 to 1,250 today, with 4,500 shunt movements. Operation always has been rendered more than

ordinarily difficult by the fact that the incoming lines are close together at the entrance to the station itself, so that the point layout is very concentrated. There are seven of these (of course connected to others farther out) but from none is it possible to run to more than eight platforms.

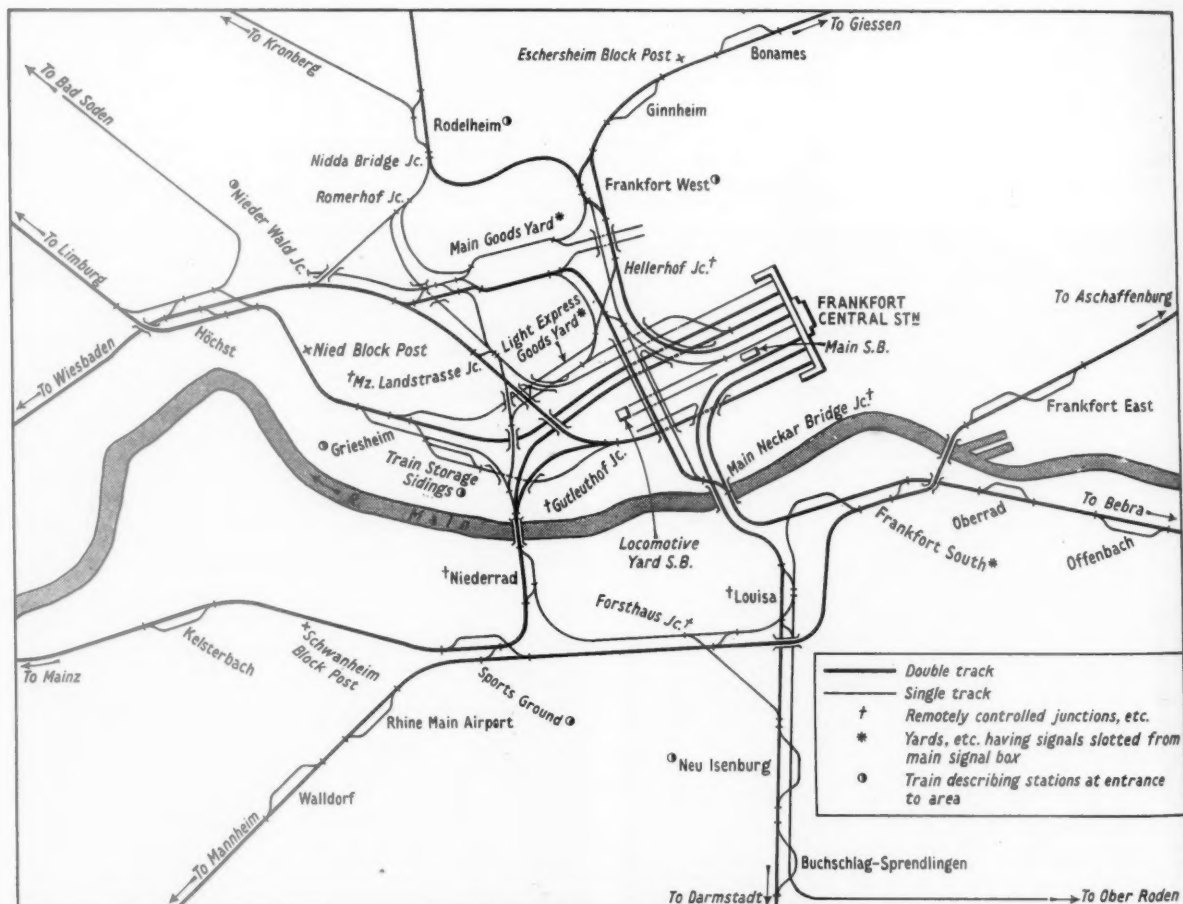
This led many years ago to the construction of a network of connecting lines, spurs and junctions within a circumference of a little over six miles, so as to remedy this lack of flexibility with the least inconvenience and render the platform lines more generally available.

The existence of the principal goods station in this area created difficulties of its own and resulted in many lines having to carry both goods and passenger services. The three bridges over the Main tended to become bottlenecks, especially the one at Niederrad, where a power signalling installation

with reversible working on the two tracks across the river has been in service since 1953. (This is now remotely controlled, as explained hereafter.)

### Outlying Locations

There are some 22 actual operating locations in the area—there is nothing on the same scale elsewhere on the German Federal Railway—with stations and junctions very close together and, until the work here described was completed they had no really effective co-ordinating control. Even when all trains were to time their handling was not easy and involved a very great number of signalling and block working operations, while the least delay on any route was invariably followed by repercussions that easily could become serious. Lack of lie-by tracks led to an excessive amount of shunting and particularly a disproportionate number



Area controlled by main signalbox at Frankfurt, showing remotely controlled junctions, yards with signals slotted from main box, and train describing stations at entrance to area



Two of the five signalmen's desk panels, each of which controls a section of the station area. Note route-setting buttons and train number describer indicators

of engine movements, while want of independent shunt signals, as these are understood in Great Britain but not used in Germany for many years, did not improve the position.

#### Signalling

The equipment installed for the opening of the station in 1888 was, of course, entirely mechanical and followed the principles by then well established in Germany. Interlocking block, worked by hand-generated a.c. current, was used between signalboxes, not only to effect block working proper but also to provide the equivalent of slotting in short sections and also the over-riding supervisor's control, such a feature of German practice. On enlargement in 1912, however, this mechanical signalling was replaced by all-electric, worked

from nine boxes controlling the station and its immediate approaches. These remained in service until the recent changeover, which was fully completed on August 11, 1957, and escaped serious damage during the last war. Shunting continued to be conducted with the aid of point indicators, combined with so-called "shunting prohibition" signals, and of late years a certain number of "draw ahead" signs, a step towards the adoption of actual shunting signals and found very effective.

#### Need for Renewal

All this equipment, as well as that in the outlying signalboxes, was in need of renewal by the end of hostilities. It was decided, therefore, to investigate the whole problem in the light of experience gained since the work was done

and apply the latest developments in signal engineering to its solution.

#### Adoption of Relay Interlocking

Although an improved design of electric power frame had been adopted in 1943 and applied at some places, by the end of the war serious consideration was being given to using relay interlocking with route setting facilities and desk type "panels" instead of frames. The first installations of this type gave satisfaction and eventually some important ones were completed, such as that at Cologne, described in our issue for March 19, 1954, page 329. It was therefore decided to construct one large main signalbox.

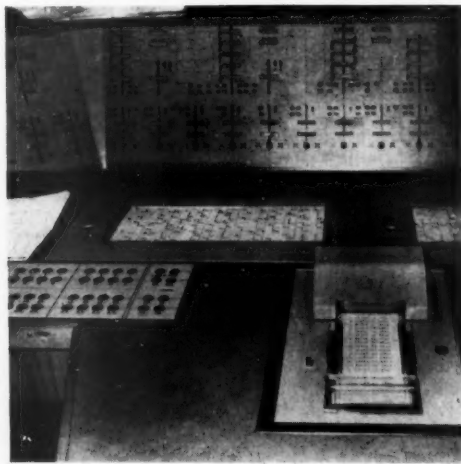
The area involved in the new scheme includes the station itself with its extensive locomotive and carriage sidings immediately adjoining and seven junctions on the approach routes, as shown on the accompanying diagram. These last also have relay interlocking signalboxes, normally unstaffed and remotely controlled from the new main one. Automatic and semi-automatic colour-light signalling with continuous track circuiting is installed throughout and all shunt movements are now signalled, point indicators being dispensed with. In addition certain signals for entering the area at goods yards, not included in the remote control, are slotted from the main signalbox and can only be cleared when permission is given.

The station area proper has been divided into five zones, each with its own desk panel in the operating room on the top floor of the box, which is glazed all round and commands an extensive view of the lines. The third, or central and busiest, of the panels, deals with the working to and from the locomotive depot, where there is a separate signalbox, also of relay type, controlling the internal movements.

Operation in the station is directed by two supervisors seated at a separate desk with small push-button panels and the necessary train description and other indications, who give instructions



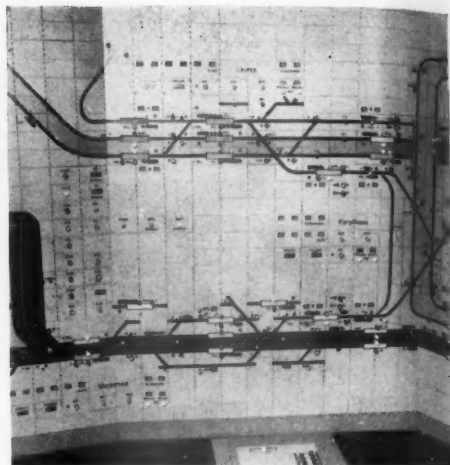
Station area traffic supervisors who give instructions to the signalmen regarding the routes to be set



Part of the station area traffic supervisors' control panel, showing train time recorder



*Outer area traffic supervisors directing movements on the approach lines and operating remotely controlled junctions; in the foreground, train announcer*



*Part of control panel used by outer area supervisors, showing train number describer indicators, push buttons and so on*

to the signalmen at the ordinary desks regarding what routes to set up for running movements, while two others deal by means of similar equipment with the co-ordination of the traffic on the outer approach sections, on the basis of the descriptions received from the various transmitting points. They are seated before a large general diagram of the routes concerned on which, as on the signalmen's desk panels and station supervisors' boards, the train descriptions appear as illuminated numbers corresponding to those in the working time table in oblong windows located at intervals on the representations of the tracks. These supervisors operate the remotely controlled junctions.

As a train moves from one section to another so does this illuminated number and thus it is possible to tell not merely that a section is occupied but also by what particular train. The descriptions are initiated by actuating push-button transmitters and stored in a relay magazine mechanism. The adoption of this system greatly reduces the amount of telephoning otherwise unavoidable. The progressive setting up of routes automatically from the information stored in the describers is to be applied generally but is not yet in full operation. Desks are provided also for the principal station supervisor and his staff and the train announcer.

#### Signalbox

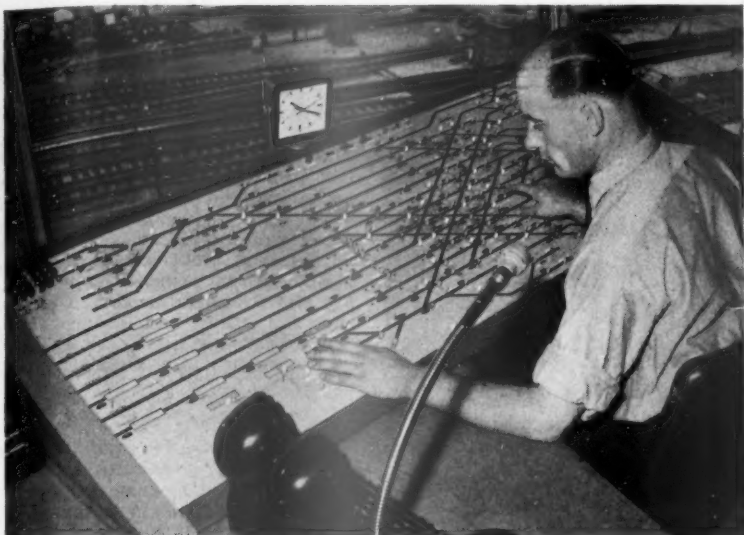
The signalbox, 72 ft. high, has a basement housing accumulators, transformers, switchgear and related equipment, and a ground floor containing the diesel-generator standby sets. Above this come two floors forming relay rooms relating to the station signalling circuits and then two more for the remote control, train description and telecommunications relays and associated apparatus, surmounted by the operating room itself, 59 ft. above rail level. This latter is reached by a lift. This contains, in addition to the equipment already mentioned, a kitchen and

other accommodation for the staff and a special separate compartment from which visitors can view the working

without disturbing those in charge and where plans, etc., can be laid out for their inspection and any explanations



*Relay interlocking signalbox at Frankfort replacing nine old type electric power boxes and controlling seven outlying junctions*



One of the five signalmen's desk panels showing route-setting and other push buttons, train describer indicators and so on

they require be given. There are 52,000 relays—of which 15,000 are in the station signalling relay rooms—arranged in standardised groups fitted with plug-

in connectors, on the system illustrated in our article on the signalling at Cologne, involving nearly 2½ million soldered connections. The signalmen's

### Re-lining Spiral Tunnels

(Concluded from page 623)

across the space, and some 4 in. of gunite added to seal the openings. Struts near the base and at the springing are concreted later to complete the lining. The completed section is then pressure grouted to fill any voids between the lining and the rock walls and roof of the tunnel.

The timber lagging and cordwood packing behind the sets remains in place after concrete lining is completed. An attempt was made to remove this material before concreting but it was found that the amount of material to be removed was entirely unpredictable both as to quantity of cordwood and loose rock. This resulted in some train delays, necessitated the use of a continuous arch barrel to support the roof, and required a large amount of grouting to fill the void between the completed arch and the rock face of the tunnel.

### Organisation

The large number of train movements, together with the limited working areas near the tunnel portals and the distance from portals to the tunnel section under construction, have added to the difficulties of planning and organising the work.

Information on the times of trains through the tunnels throughout the day is obtained at 7 a.m. and 1 p.m. Look-outs are stationed at sufficient distance from each portal to see approaching trains approximately 10 min. before their arrival at the tunnel. The foreman

in the tunnel is advised accordingly and the work has been organised so that the line is clear and scaffold removed before trains travel through the tunnel usually without being required to stop or reduce speed.

### Equipment

The alignment and length of tunnel prevents the use of motor-powered equipment except for brief periods of time because of unsatisfactory ventilation. Considerable work must, therefore, be performed manually which would be done by machines under normal conditions. The equipment at the site consists of two 345-cu. ft. min. compressors; three power plants, two 10 KVA. and one 3 KVA. for lighting and small tools; three water pumps; two gunite machines; one grout pump; one concrete mixer of 1-cu. yd. capacity; and four scaffolds on dollies, which are moved manually on the track, one for guniting, one to install mesh and reinforcing steel, one to remove timber lining and one for stripping forms. The working party averages 29 to 32 men and work is confined to the period from May to October inclusive.

The project has been in progress for four years, 1,865 ft. of lining has been completed, requiring approximately 40,000 cwt. of cement for concrete, gunite and pressure grouting operations.

The work is being carried out by Creaghan & Archibald, Montreal, under the direct supervision of Mr. M. S. Wakely, Division Engineer, Canadian Pacific Railway.

desk panels control 421 running and 1,436 shunting routes, involving 476 points and derailleurs, operated by electric motors, with 74 stop and distant and 470 shunt signals. (There are about 200 shunt movements during the heaviest peak hour occasioned largely by the necessity to transfer through coaches between long-distance trains.)

### Outer Area

The outer signal area, in which are the seven remotely controlled junctions, operated by the two traffic supervisors above mentioned, with the three goods yards whose starting signals they release, contains 120 sets of points and 50 signals of various types, and involves about 2,000 train movements daily, for which the 20 remote control channels have to transmit some 120,000 controls and return indications, or a total of about 43,000,000 per annum. A staff of 27 in the new box, working in three shifts of nine, now does the work for which 80 were needed under the old arrangements.

This signal engineering work has been carried out to the requirements of the German Federal Railway by Siemens & Halske A.G., Wernerwerk für Signaltechnik, Braunschweig, Western Germany.

### A CHICAGO SUBURBAN TRAFFIC PLAN.—

The Chicago & North Western Railway is planning to remodel its Chicago suburban passenger service by the use of push-and-pull trains consisting of Bo-Bo diesel-electric locomotives with gallery-type double-deck coaches. The first of the latter, 85-ft. cars with 172 seats apiece, are already in use. As a start, four trains of nine cars, accommodating over 1,500 passengers each, would be marshalled. At the outer end, a small driving compartment would be provided at the gallery level; and in the length of the train there would be a second driving cab-equipped car, so that the trains could be reduced in length at the non-rush hours. The locomotive would always remain at the north end.

For such working it would be necessary to equip the locomotives with 480-volt diesel-electric alternators to provide for lighting, air-conditioning, and control apparatus. The C. & N.W. is prepared to buy the first 36 gallery cars needed for this service if the Illinois Commerce Commission agrees to the closure of 23 stations in the inner ring of Chicago suburbs and to an increase of 24 per cent in season ticket rates. With these concessions, and the quicker turn-round of trains made possible by push-and-pull working, the C. & N.W. believes that it can make its commuter service pay. In that event it will be prepared to buy 54 more gallery cars of the new design and to rebuild 48 existing cars to the same standard, which would offer far greater comfort than many of the old commuter cars now in use.

## General-Purpose Alloy Containers for British Railways

*Use of lightweight materials to reduce tare weight*



*Five-ton container of aluminium alloy construction for British Railways*

**P**ARK Royal Vehicles Limited has designed and constructed for British Railways 50 general purpose containers of lighter weight than the standard British Railways "B" type at present in use. These are the first all-aluminium containers of this type to be completed for British Railways. Although based on this design dimensionally, the container has improved constructional methods and is built from light alloy materials throughout, resulting in reduced tare weight, greater strength and anticipated reduction of maintenance costs, and soon.

The container has a capacity of 709 cu.

ft. and can carry a load of 5 tons. It is 16 ft. long, over framing, 7 ft. wide and 7 ft. 9 in. high and has a tare weight of some 21 cwt. This means that a weight reduction of around 30 per cent has been achieved compared with the standard "B" type containers of composite construction of around 30 cwt. An additional advantage, which results from the light alloy construction, is that the containers need not be painted.

The main framing is based on aluminium alloy channel section crossbearers riveted to 6-in. deep alloy side angles. To this is bolted the floor of 8-in. wide extruded ribbed and tongued and

grooved planking. The main sides and front end are of 13-in. wide tongued and grooved extruded planking with one stiffening rib, which are arranged vertically at the sides and horizontally at the ends. These are cemented together with Araldite cold setting resin cement, and are riveted to the floor angles and cant angle. The roof framing, also riveted to the cant, is of alloy H-section main and channel intermediate sticks, with channel longitudinal panelled externally in alloy sheet.

### Alloy Planking

The basic design involving the use of tongued and grooved extruded aluminium alloy planking cemented together and built in to a framing is that of T.I. (Group Services) Limited; the adoption of this design and all detail work in preparation of the containers was by Park Royal.

The rear end has two vertically hinged doors with a bottom hinged tailboard below, all seating on tubular rubber sealing strip and locked by a lever-operated cam type lock. Large lifting braces, plated to spread the load, are riveted to the cant and main side planking, and corner lashing rings are provided, with heavy rubber corner buffers below.

The complete interior of the sides, end and roof are lined with plywood sheet, blind riveted to the framing, and since the container is for general purposes only, no insulation is provided. Care is taken to avoid any damaging projections inside, and the doors are arranged to hinge back to the bodyside to provide the greatest possible loading space through the rear end opening.

## Express Working in the London Midland Region



*Down "Caledonian" passing Camden Locomotive Depot, hauled by class "8" 4-6-2 locomotive "City of Sheffield"; from June 9, the "Caledonian" will run twice daily between Euston and Glasgow Central*

## RAILWAY NEWS SECTION

## PERSONAL

Sir Brian Robertson has been appointed for a further term of five years as Chairman of the British Transport Commission. His present term of office was due to expire on September 14. The following appointments are also renewed for a further term: Mr. J. W. Watkins, full-time member, and Sir Cecil M. Weir and Mr. T. H. Summerson part-time members. Sir

Employment Officer, Locomotive, Carriage & Wagon Shops, Lucknow, in 1932, and Manager, Signal Workshops, Howrah, in 1936. After a short period of service as Divisional Personnel Officer, he was transferred to the Construction Branch and was in charge of the New Phalgu Bridge Construction at Gaya before reverting to the open line. In 1948 he became Deputy General Manager, Organisation, and, subsequently, Deputy

Officer. From 1943 to 1947, he worked in the North West Frontier areas in Quetta and at Rawalpindi as Divisional Transportation Officer. On partition in 1947, he handled the movement of a large number of persons displaced from India and Pakistan, in his capacity as Divisional Transportation Officer at Ferozepur. In 1948, Mr. Singh was appointed Deputy Chief Administrative Officer of the newly-formed Eastern Punjab Railway. Two



*Mr. S. Sarangapany*  
General Manager, Eastern Railway,  
India, 1955-58



*Mr. Kripal Singh*  
Appointed General Manager,  
Eastern Railway, India

Phillip Warter, Chairman, Southern Area Board, has been appointed a part-time member of the Commission, in succession to Mr. F. A. Pope, who retired on April 30.

Mr. S. Sarangapany, General Manager, Eastern Railway of India, who has retired, graduated in mechanical and electrical engineering from the College of Engineering, Madras. After subsequent practical training at the Locomotive Shops of the Madras & Southern Mahratta Railway at Perambur, Mr. Sarangapany was appointed Mechanical Engineer to the Sree Meenakshi Mills, Madura. He resigned this position in 1927 when he was appointed a candidate engineer, and subsequently Assistant Engineer, on the M. & S. M. Railway. In 1929 he joined the Indian State Railways as Assistant Executive Engineer, and, before his promotion as Executive Engineer in 1941, he carried out the remodelling of some of the bigger marshalling yards on the East Indian Railway. He also served as

Chief Engineer. In 1949 he was appointed Divisional Superintendent and continued in this capacity until he became Engineer-in-Chief, Calcutta Electrification Project, in 1954. Later that year he visited Europe to study post-war developments in railway electrification. In March, 1955, he went to Japan to assess the capacity of that country's electric rolling-stock industry. Mr. Sarangapany was appointed General Manager of the Eastern Railway in August, 1955.

Mr. Kripal Singh, who, as recorded in our April 18 issue, has been appointed General Manager of the Eastern Railway of India, was born on January 22, 1907. He obtained the degree of M.Sc. from the Hindu University, Banaras, in 1929 and, the following year, joined the then North Western Railway as a probationary Assistant Transportation Officer. He subsequently served as an Operating Officer in all seven divisions of that railway. In 1941, he became Divisional Transportation

Officer. From 1943 to 1947, he worked in the North West Frontier areas in Quetta and at Rawalpindi as Divisional Transportation Officer. On partition in 1947, he handled the movement of a large number of persons displaced from India and Pakistan, in his capacity as Divisional Transportation Officer at Ferozepur. In 1948, Mr. Singh was appointed Deputy Chief Administrative Officer of the newly-formed Eastern Punjab Railway. Two

years later he became Divisional Superintendent at Ferozepur. After re-grouping of the railways of northern India in 1952 he became Divisional Superintendent at Allahabad. In this position he was responsible for the heavy pilgrim traffic during the Kumbh Mela in 1954. Later that year he was transferred to the Eastern Railway as Divisional Superintendent, Asansol. In October, 1954, he went to Japan to represent the Indian Railways on the Railway Sub-Committee of E.C.A.F.E. In 1955, after working as Divisional Superintendent, Howrah, Mr. Singh became Chief Operating Superintendent.

Mr. T. E. Chrimes, Motive Power Superintendent, Southern Region, British Railways, is retiring at the end of this month.

Mr. L. M. Sayers, Assistant General Manager, London Midland Region, British Railways, has been appointed Assistant General Manager (Administration), North Eastern Region.



**Mr. P. V. Hannam**

Appointed Principal Administrative Officer,  
Malayan Railways



**Mr. L. A. Perkins**

Appointed Chief Accountant,  
Malayan Railways



**Captain R. E. Sherwood**

Appointed Marine Superintendent, L.M.,  
Western, and Scottish Regions

Mr. P. V. Hannam, who, as recorded in our March 28 issue, has been appointed Principal Administrative Officer, Malayan Railways, was born in 1920, and educated at Westminster. In 1937, he joined the Commercial Department of the former London Midland & Scottish Railway. He served in the Royal Engineers (Transportation) from 1940 to 1946, mostly in the Far East. From 1943 to 1944 he was attached to the Ceylon Government Railway as an Assistant District Officer, and was demobilised as Officer Commanding, 164 Railway Operating Company, R.E. in Berlin. In 1946 he returned to the L.M.S.R. as Signaller's Inspector and later, having served as a Traffic Apprentice, he was appointed Goods Agent, Wellingborough and subsequently at Kettering. In 1951, Mr. Hannam joined the Malayan Railway and became Senior Assistant Traffic Superintendent success-

ively at Port Swettenham, Kuala Lumpur, and Tumpat.

Mr. L. A. Perkins, who, as recorded in our March 28 issue, has been appointed Chief Accountant, Malayan Railways, began his railway career in 1927, in the Chief Accountant's Office of the Great Western Railway at Paddington. He was in various branches of that office until the outbreak of war, when he joined the R.A.M.C. He served in France and in June 1940 was evacuated from St. Nazaire. He was commissioned in R.A.S.C. in 1941, and later was mentioned in Despatches. In 1945 he took a Civil Affairs course and in October 1945 was appointed Assistant Accountant Malayan Railway, on cessation of Military Administration in Malaya. He was demobilised with the rank of Major in 1946. In that year he became General Administrative Assistant to the General

Manager and served as Chief Personnel Officer in 1948. In 1949 he was appointed Assistant Stores Superintendent and in 1951 he was made Stores Superintendent. He was appointed Assistant Chief Accountant in 1952, and became acting Chief Accountant in April 1957, the appointment which was confirmed in October that year.

Captain R. E. Sherwood, who, as recorded in our May 23 issue, has been appointed Marine Superintendent, London Midland, Western and Scottish Regions, British Railways, is the son of the late Captain R. H. Goole, former Master of the L.M.S. vessels of Associated Humber Lines Limited. From 1922 to 1935 Captain R. E. Sherwood served in both deep-sea and coastal ships. Captain Sherwood joined the Royal Naval Reserve in 1930 and was called for six months' special



**Mr. H. Geoghegan**

Appointed District Goods Manager,  
Bolton, L.M. Region



**Mr. G. W. Murrell**

General Agent, Liverpool, C.P.R.,  
1952-58



**Mr. P. Spilsbury**

Appointed General Agent,  
Liverpool, C.P.R.

service with the Royal Navy during the Abyssinian War. He began his railway service at Holyhead, in 1935, as Second Officer on the Irish Services. From 1939 to 1946 he served with the Royal Navy in command of various ships, units and shore stations and was awarded the D.S.O. for work on escort duty in the North Atlantic. After the war he rejoined the L.M.S. Holyhead Fleet. While there he served in all the various ships and rose from Junior Officer to Master. In 1954, he was appointed Assistant Master (Acting), Irish Shipping Services, London Midland, Western and Scottish Regions, British Railways, the position he now vacates.

Mr. H. Geoghegan, who, as recorded in our May 9 issue, has been appointed District Goods Manager, Bolton, London Midland Region, British Railways, joined the former London & North Eastern Railway in 1927 at Deansgate Goods Depot, Manchester. In 1935, Mr. Geoghegan became attached to the staff of the District Goods Manager. In 1937 he transferred to the Goods Manager's Office (Liverpool Street), on special enquiries at stations. He served with Movement Control, Royal Engineers, from 1940 to 1946 attained the rank of Captain. He was demobilised in 1946 and became Chief Clerk, Edgware, and later that year District Inspecting Clerk, London Suburban District Goods Manager's Office. In 1948, he was appointed Headquarters Claims Prevention Clerk, Commercial Superintendent's Office, Liverpool Street. In 1951 he became Special Outdoor Representative, Commercial Superintendent's Office, Waterloo. In 1952 he was appointed Assistant Goods Agent, St. Pancras & Somers Town, four years later, Goods Agent, Nottingham, and, in 1957, Assistant District Commercial Manager, Derby, which post he now vacates. Mr. Geoghegan is an Associate Member of the Chartered Institute of Secretaries.

Mr. G. W. Murrell, M.C., General Agent, Liverpool, Canadian Pacific Railway, whose retirement was recorded in our May 9 issue, joined the Allan Line as a junior clerk in London in 1908; the Allan line was absorbed by the Canadian Pacific in 1917. He enlisted in the ranks of the Royal Fusiliers in September, 1914, and was commissioned in 1916; he was wounded three times and won the M.C. On being discharged in 1919 he returned to London and joined the C.P.R. Passenger Department. When the company opened its Southampton Office in 1922, Mr. Murrell went there as chief clerk in the Passenger Department. From 1929 to 1934, he served as Cruise Director on Mediterranean Atlantic Isles and West Indies cruises. He moved to Birmingham as Passenger Agent in 1936, and to Bristol in the same capacity in 1950. He took charge of the Bristol Office, as General Agent, in 1950, and became General Agent, Liverpool, in 1952. Mr. Murrell is a founder member and Past President of the Birmingham and Bristol Skat Clubs. He is Honorary Secretary of the Liverpool & District Canadian Club.

Mr. P. Spilsbury, M.B.E., General Agent, Manchester, Canadian Pacific Railway, who, as recorded in our May 9 issue, has been appointed General Agent, Liverpool, joined the C.P.R. Passenger Department in London in 1928. Before the war he went on seven round-the-world cruises in the *Empress of Australia* and *Empress of Britain*, as Assistant Cruise Director and was also Cruise Director on Mediterranean voyages. In February, 1940, he joined the

Royal Engineers, as a Movement Control Officer. He was in the expedition to Norway and later went to the Middle East. He rose to the rank of Lt.-Colonel and was made an M.B.E. Mr. Spilsbury returned to the C.P.R. in 1947 and was appointed Freight Travelling Agent, attached to the London City office. In 1950 he became Passenger & Freight Agent, Bristol, and was appointed General Agent there in 1952. He took charge of the Manchester office in January last year.

Mr. S. F. Major, Estate & Rating Surveyor, North Eastern Region, British Railways, who, as recorded in our April 4 issue, retired March 28, after nearly 47 years' service, began his railway career in 1911 with the Great Western Railway, in the Surveyor's and Estate Department, Paddington. In 1914 he enlisted in the London Irish Rifles, and served in France and Belgium. He was demobilised with commissioned rank in 1919. In 1922, he was appointed Assistant District Estate Agent, Bristol, and, in 1925, took charge of the London District of the Surveyor's & Estate Department at Paddington. In 1939, he became District Estate Agent, Bristol, and in 1943 General Assistant to the Surveyor & Estate Agent, Paddington, becoming Principal Assistant in 1948. In 1951, Mr. Major was appointed Estate Surveyor, York, North Eastern Region, British Railways. In 1956 became Estate & Rating Surveyor to that Region, and was responsible for the management of railway estates. Mr. Major has held the Chairmanship of the L.N.E.R. (Gosforth) Garden Village Limited, the former Durham County Garden Villages Limited and York & District Garden Villages Limited. He was also Trustee & Secretary of the North Eastern Region Housing Trust, and Trustee of the Cottage Homes and Benefit Fund. He is a Fellow of the Royal Institution of Chartered Surveyors. Mr. Major is a former holder of the British Railways Golf Championship.

Colonel N. McK. Jesper, Chief Police Officer, British Transport Commission, is retiring early in July. As recorded editorially and in the personal pages of our February 14 issue, the position of Chief Police Officer is being abolished and that of Chief Constable established. The appointment of Mr. A. C. West as Chief Constable was recorded in our last week's issue.

The London Midland Region of British Railways announces the following appointments:—

Mr. I. G. White as Assistant Engineer (Modernisation), Chief Civil Engineer's Office, Euston.

Mr. A. R. Ogley as Modernisation Assistant to Operating Officer, Euston.

Mr. J. G. Batley, Area Assistant District Engineer, York, North Eastern Region, British Railways, has been elected an Associate Member of the Institute of Civil Engineers.

Mr. L. H. Joslin, Chief Clerk, Line Traffic Manager's Office, Great Eastern Line, Eastern Region, British Railways, has been appointed Assistant to the Commercial Officer (Mineral) of that region.

We regret to record the death, on May 15, of Mr. C. K. Balakrishnan, Higher Executive Officer, Railway Branch, India Stores Department, London. The funeral took place at Golders Green Crematorium on May 22.

Mr. Patrick Farnan, Secretary, Victorian Railways, will retire in August, and will be succeeded by Mr. Alfred Gilmore.

Mr. P. T. Hume, Nigerian Railway, has been elected a Graduate of the Institution of Civil Engineers.

We regret to record the death, on May 22, at the age of 70 of Mr. Eilif I. Froshaug, Manager of the Norwegian State Railways Travel Bureau in London and doyen of the official representatives in the United Kingdom of all foreign tourist countries. Mr. Froshaug, began his career with the Norwegian State Railways in 1906. He became the railway's U.K. travel representative at the Norwegian Travel Bureau in 1912, and was in charge of the Bureau from 1920 until his retirement last December. He held the Order of St. Olav 1st Class. A full biography and photograph of Mr. Froshaug were published in our December 27, 1957 issue.

Mr. Thomas Johnston, Chairman of the North of Scotland Hydro-Electric Board, has been appointed President of the British Electrical Development Association in succession to Viscount Chandos. Lt.-Colonel E. H. E. Woodward, a member of the British Electricity Authority and the Central Electricity Authority until last December, has been elected Vice-President of the Association. Mr. W. N. C. Clinch, Controller, Eastern Division, Central Electricity Generating Board, has been elected Chairman of the Council, for the year 1958-59, and Mr. T. E. Daniel, Chairman, North Western Electricity Board, becomes Vice-Chairman.

Mr. W. D. Sutherland has been appointed Chief Engineer (Electrical), C.A.V. Limited.

#### THE INSTITUTE OF TRANSPORT

The following nominations, as Officers and Committee Members, from October 1, 1958, to September 30, 1959, have been announced by the Institute of Transport:—

*Chairman*  
Mr. C. F. Klapper, *Modern Transport*;

*Immediate Past Chairman*  
Mr. Alex J. Webb, London Transport

*Executive*;

*Vice-Chairmen*

Messrs. S. G. Hearn, British Railways, Eastern Region; A. Watson, Chamber of Shipping; W. L. Ives, British Transport Commission (Waterways);

*Honorary Treasurer*

Mr. A. R. Parselle, Ministry of Food;

*Honorary Secretary*

Mr. C. F. King, Bryant & May Limited.

*Committee*

Messrs. S. A. Fitch, Southern Region,

British Railways; L. W. Cox, London

Midland Region, British Railways; B. H.

Harbour, London Transport Executive;

A. F. Walton, British Road Services; G. F.

Fiennes, Eastern Region, British Railways;

A. J. Hailstone, General Steam Navigation

Co. Ltd.; J. F. Parke, *Modern Transport*;

G. F. Page, J. Lyons & Co. Ltd.; L. S.

Pagan, S.P.D. Limited; A. J. Wright,

British Road Services; F. C. G. Mills,

W. H. Martin Limited; R. E. G. Brown,

Traders Road Transport Association; R. C.

Hider, London Transport Executive; S. A.

Fricker, Glen Line Limited; E. J. Morris,

Pullman Car Co. Ltd.; M. Ormerod, S.P.D.

Limited; R. M. Robbins, London Transport

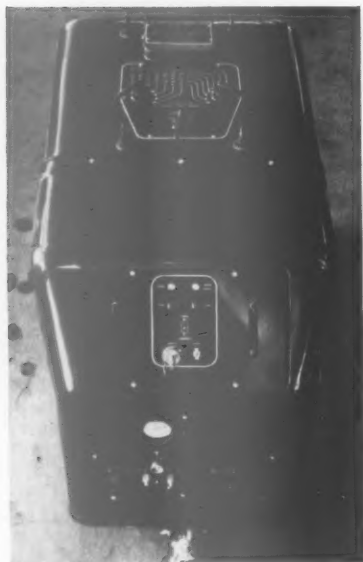
Executive; E. G. Whitaker, Unilever

Limited; W. M. Dravers, B.E.T. Co. Ltd.;

W. Fraser, Transport Development Group

Limited.

## NEW EQUIPMENT AND PROCESSES



**Composite Power Unit for Argonarc Welding**

A COMPOSITE power unit which is designed for use with the Argonarc welding process is now being marketed. Known as the CPU 350, this compact, mobile unit is stated to provide maximum productive efficiency when used in connection with the a.c. welding of aluminium and its alloys up to  $\frac{1}{4}$  in. in thickness in a single pass, and the welding of stainless steel up to  $\frac{1}{4}$ -in. thick.

A remote control foot switch, coupled with automatic arc starting and control of both argon and water enables welding speed to be increased. After the unit has been switched off, the electrode cools in the protecting argon envelope, the gas continuing to flow automatically for a predetermined period. This results in economy of gas and ensures cleanliness of the electrode.

It incorporates surge injection, which is the introduction into the arc of a d.c. pulse, timed to coincide with the beginning of the oxide scavenging positive half-cycle only. This is of sufficient magnitude to cause the arc to ignite immediately and thus provides a full positive half-cycle.

Surge injection allows a substantial reduction of open circuit voltage, resulting in a lower transformer rating, together

with a reduction in the amount of current taken from the mains.

With the d.c. suppressor unit, an equal positive and negative half-cycle of welding current is ensured, giving welds which are clean and bright.

The composite power unit is suitable for 360-500 V. 50-cycle single-phase operation, with a striking voltage of 50 V. Rating is 10.75 kVA. continuous or 17.5 kVA. at 0.5-duty cycle. Welding current is 25-350 A. and 215 A. continuous. The unit is contained in a glass fibre case which has quickly removable panels to reduce maintenance time.

The manufacturer of the CPU 350 unit is British Oxygen Gases Limited, 1, Spenser House, St. James', London.

### Internal Grooving Tool

SAVINGS in costs and time are claimed for a tool recently introduced for cutting to close tolerances grooves in bores, concentric to the bore diameter.

The tool, known as the Truarc, is versatile and can be used in standard drilling machines, capstan and centre lathes, automatic machines or milling machines; it can also be used in a portable drill.

The tool will operate either when it is rotating and the workpiece is static, or vice versa. Its most common application, however, will be with a drilling machine.

As the spindle of the machine is entered into the job the bush in the gauge head, or the bottom adapter, pilots into the bore to locate the cutter in its position to begin cutting the required groove. Continuing pressure on the machine spindle causes the cutter to move from its neutral position, in an eccentric movement, until the required depth of groove is attained. When this depth is reached, the machine spindle will not move any further, even though downward pressure is still being applied, this "stop" action being within the tool itself.

When the pressure on the spindle is relieved the cutter returns to its neutral position, and the tool can then be withdrawn from the bore of the part now grooved.

It is pointed out that it can be used by unskilled labour without any sacrifice of accuracy.

Although designed primarily for cutting grooves for retaining rings, it can be used for general machine shop purposes, where its ability to cut various shapes of grooves, and, if necessary, to incorporate other operations such as chamfering, facing, or undercuts for threads, can effect economies. The standard tool is available in five sizes, covering bores from  $\frac{1}{8}$  in. to 4 in.

Prices range from £65 to £165, deliveries from ex stock to 12 weeks. Further details may be obtained from the manufacturer, Geo. Salter & Co. Ltd., West Bromwich, Staffs.

### Mobile Heating Projector

A MOBILE infra-red projector unit has been designed where it is required to bring a heating unit to a particular operation as for stoving or accelerating air-drying paints on large heavy objects such as castings. The unit is not suitable for drying low flash point finishes without taking suitable precautions; all such applications should be discussed with the manufacturer.

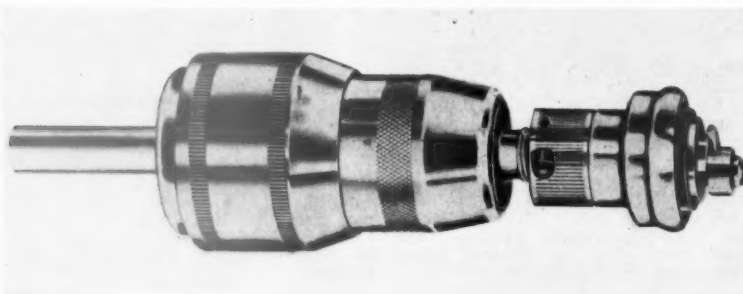
The unit, consisting of a standard Metro-Vick projector with tubular sheathed elements, is mounted on a robust tripod fitted with rubber-tyred swivelling castors. The method of construction of the tubular



sheathed element and the projector unit makes this equipment particularly strong and enables it to withstand arduous service conditions.

Although other sizes of projector are available, the equipment has been designed for the 24-in. unit, rated 2.2-7 kW. at standard single-phase voltages. Local switching is provided by means of a three-heat switch giving control over one, two or three elements. The telescopic tube allows a height adjustment from 36 to 60 in. above ground with the projector in the position shown; at the same time, the projector can be swivelled through both horizontal and vertical planes to direct the heat to the desired area.

The price, including the standard 24-in. infra-red projector, is £40. Further details may be obtained from the manufacturer, Metropolitan-Vickers Electrical Co. Ltd., Trafford Park, Manchester, 17.



## Tapping Fluid

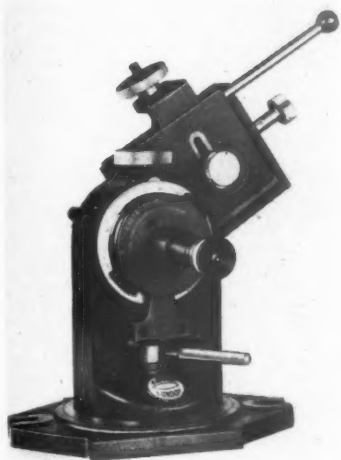
A TAPPING fluid has been introduced; known as A.P. cutting fluid, it is an extreme-pressure coolant and is stated to have unusual penetration properties. Originally produced for tapping armour plating, it has since been found to be very suitable for tapping all very high tensile materials.

Savings in tool costs and production delays by the use of the product in such special circumstances are claimed to more than offset the high cost of the fluid, which, applied by brush, is economical in use.

A.P. cutting fluid costs 46s. 1d. per gal. and is supplied in 5-gal. drums, but the manufacturer will supply small samples on request. The manufacturer is Amber Oils Limited, 11A, Albemarle Street, London, W.1.

## Tool Grinding Attachment

THE Baker-Pera tool grinding attachment is a fitment for existing tool and cutter grinding machines. The equipment makes it possible not only to grind the essential angles quickly and accurately, but it also incorporates the movements required to grind the nose radius



to definite values and to ensure that it blends tangentially with the cutting edges of the tool.

The manufacturer points out that it is not always appreciated how important blending of the nose form with the cutting edge is, and the effect it has on the life of the tool and on the accuracy of the machined surface.

Research by the Production Engineering Research Association of Great Britain has shown that imperfect blending of the nose, or an imperfect form, that is, one with facets, produces premature breakdown of the cutter, leading to loss of time on costly machine tools.

The cutter to be ground is located against a strip in the attachment, the angles being set off from the horizontal and vertical divided scales. A low-power inspection microscope with a special graticule within the eyepiece is used to set the nose for grinding the radius and

to ensure that the circumference blends correctly with the cutting edges.

The tool grinding attachment, seen in the accompanying illustration, is supplied with full instructions for operation, and supplementary tool plate for grinding tools with relief angles greater than 30 deg. The net weight is 50 lb.

The Baker-Pera tool grinding attachment is made from a design originated by the Production Engineering Research Association of Great Britain, by C. Baker of Holborn Limited, Metron Works, Purley Way, Croydon, Surrey, from which company further details may be obtained.

## Sintered Metal Friction Materials

THE production of facings for clutches and brakes made of sintered metal and cerametallic friction materials has commenced in this country; the manufacturer is collaborating with the S. K. Wellman Company of the U.S.A.

Advantages of sintered metal materials include cooler running and longer life compared with normal friction materials. This is because the metal powder absorbs energy and conducts heat faster than most organic or mineral friction materials; thus it can be used under conditions which would lead to excessive temperatures for asbestos-based materials. Although the product possesses a lower coefficient of friction than asbestos-based facings, that coefficient is maintained through a wide range of temperature and pressure variation, which allows a smooth engagement.

Railway applications of the material include the multi-plate oil-immersed clutches employed in automatic gearboxes for some types of rail vehicles, and also the clutches which lock up the torque converters used in some railcar transmissions.

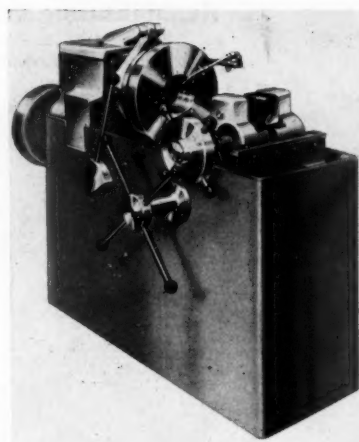
The basic processes involved in manufacture are as follows:—The dry metal powders are mixed and blended, and are then cold-compacted at high pressures. The compacts are next assembled on their backings or cores prepared so as to assist the formation of a bond between plate and facing. The assembly, of compact and backing plate, is then sintered in a reducing atmosphere at temperatures up to 1,000° C. After sintering, the assemblies are finished by grinding, edge trimming, drilling, branding and other necessary finishing operations. They are finally inspected as to their dimensional accuracy.

A range of materials is being produced for varying requirements; further details may be obtained upon application to the manufacturer, Ferodo Limited, Chapel-en-le-Frith, Derbyshire.

## Threading Machine

THE 4C/ST threading machine with a 4-in. pipe, 2-in. bolt capacity has been designed for general purpose and maintenance work. Features of the machine include a totally enclosed, automatically lubricated headstock with shafts on replaceable bearings, a heavier saddle with stronger jaws incorporating replaceable nuts, and a hammer-action vice to reduce operator fatigue.

A large star traverse wheel is fitted for ease of thread start, with an inverted rack to prevent damage through swarf; the replaceable head is of forged steel. The tapering mechanism is an essential feature



of the machine, but parallel tube and bolt threads are produced with equal simplicity. The built-in tapering mechanism is operated by the forward movement of the saddle which withdraws the cam and allows the spring-loaded dies to withdraw from the work at a predetermined rate. Die life is enhanced and, because of the unique tapering mechanism, the worn tools can be ground repeatedly without affecting the length of taper thread produced. Instantaneous level release facilitates rapid operation, returning the dies to the operating position when the head is closed.

The saddle is of narrow guide construction and traversed by rack and pinion through a large star wheel to provide lightness of operation. The maximum thread length is 12 in. at one setting and the saddle design gives support under the head with long bearing surfaces on the bedways. The vice is self-centring through left- and right-hand threads and interchangeable nuts are incorporated in the jaws.

Coolant equipment is built into the machine to provide automatic lubrication of the dies. Provision is made for the storage and easy removal of swarf.

The nett weight of the machine is 14 cwt. The price of the machine (bare) exclusive of dies and electrical equipment is £305. Further details may be obtained from the manufacturer, Maiden & Co. Ltd., Hyde, Cheshire.

## Adjustable Torque Wrench

A SMALL torque wrench, the AVT.280, with a capacity of 40-280 lb.-in. has been added to the manufacturer's range of these tools.

Features of the range include robust construction and a design which eliminates internal and external parts liable to damage. It is graduated in lb.-in., lb.-ft., and m.-kg., and adequate controlled leverage prevents operator fatigue. There is no violent kick or long travel between unloading and automatic resetting.

Operation of the wrench is simple; all that is required being a pull on the handle until the set torque is reached, when a loud metallic click will be heard. Any over-loading of the screwed part is thus eliminated.

The AVT.280 has an overall length of 15½ in. and weighs 1 lb. 6 oz.; it is fitted with a ¼-in. square end drive. Further details may be obtained from the manufacturer, Jenks Bros. Ltd., Britool Works, Bushbury, Wolverhampton.

## Rehabilitation Centre at Doncaster

*Remedial treatment for injured staff*



*Various apparatus for treatment in the rehabilitation centre at Doncaster*

The Doncaster Rehabilitation Centre is the latest establishment on British Railways where the system of industrial rehabilitation is applied. It was opened in March, 1957. Doncaster Works, as the focal point of railway workshop activity in the area, was chosen as a convenient locality.

The Centre is in the care of the Area Medical Officer for Doncaster, Dr. W. Turnbull, under the direction of Dr. J. Sharp Grant, Regional Medical Officer of the Eastern Region.

The building is of brick and concrete construction and includes an exercise workshop, storeroom, cloakroom and toilet and consulting and office accommodation for the medical officer and his staff.

The remedial treatment which a patient receives at the centre is based on specially adapted machines which induce controlled and graduated therapeutic movements, and, at the same time, result in productive work. In most cases the normal operating levers on these machines have been replaced by special adaptations for both hands and feet, calculated to give the needed exercise to various joints and muscles. In addition to machine work, many small jobs are done such as filing, stamping and the assembly of small components. Although these tasks are simple, they provide useful therapeutic exercises.

### Restoration of Confidence

The productive character of the work is felt to be important, the patients feeling that they are doing a real job of work for which they are paid. An essential part of the treatment is, in fact, to restore confidence and provide a general toning-up, factors of great importance with patients who have had serious injuries or long absences from work.

The medical officer attends daily and, in consultation with the rehabilitation supervisor, he considers the type of work needed by each person. A consultant orthopaedic surgeon visits the Centre at regular intervals. The supervisor is responsible to the

Locomotive Works Manager for day-to-day running of the workshop and work done in it is credited to the centre at the same cost as if it had been done in the main shops.

Some patients are referred to the centre by the Doncaster Royal Infirmary; others are selected from weekly lists of accidents submitted by various railway departments to the Area Medical Officer. A close liaison is maintained with the Infirmary and with local general practitioners.

Admission to the Centre is voluntary and open to all male staff in the Doncaster area.

## New Roofs at Lincoln

Platform awnings and flat roofs at Lincoln Central Station, British Railways, Eastern Region, have been rebuilt to the design and under the supervision of Mr. A. K. Terris, Chief Civil Engineer, of the Region.



*Lincoln Central Station, showing new platform awnings and roof*

Universal asbestos cement heavy section decking units were used. They were mainly in 10-ft. lengths, 2 ft. 3 in. wide, and 5 in. deep. Normally such units are laid with metal reinforcing rods in the channels, which are then filled with fine concrete. In this instance, however, they were laid dry on steel joists and were covered with 8 ft. x 4 ft. flat asbestos cement sheets, 1/4-in. thick, which provided a base for a three-layer felt finish. The undersides of the units had flat sheets pre-fixed to provide a ready-made smooth soffit. The total area of decking used on four platform awnings and adjoining platform buildings was 115 squares (11,500 sq. ft.).

Fluted sheets of asbestos cement were also adopted for valances to the platform awnings, totalling about 1,025 ft. run. The sheets were 3 ft. 10 1/2 in. wide and 1/2 in. thick, with flutes at 3 1/2 in. centres; most of them were 4 ft. long.

The asbestos cement decking units, flat and fluted sheets were supplied by the Universal Asbestos Manufacturing Co. Ltd., of Watford, through Macquire & Murray Limited, of Bermondsey, London, S.E. The contractors were R. F. Herron Limited, of Ruislip.

**CHANNEL TUNNEL SURVEY.**—At the annual general meeting of the Channel Tunnel Company on May 23, Mr. Leo d'Erlanger, the Chairman, stated that a decision on whether or not it would be possible to build a tunnel under the Channel would probably be made by the end of next year. He said that work on surveying the bed of the Channel would start this summer. The shaft and galleries begun at Sangatte, near Calais, some 75 years ago would be cleared. The project is now in the hands of an international syndicate of British, French, and American interests.

**VISITORS TO BRITAIN DURING MARCH.**—In March, 64,700 overseas visitors arrived in Britain, an increase of 15 per cent over the total of 56,400 for March, 1957. Some 10,000 Americans arrived during the month, 18 per cent more than in the same month last year, when the number was 8,500. Large increases were also recorded in traffic from many other countries. Arrivals from Europe totalled 32,000, an increase of 17 per cent over last year's figure of 27,000. Traffic from Sweden was up by 46 per cent, from France and Austria by 38 per cent, from Norway by 31 per cent, and from Germany by 24 per cent.

## Ministry of Transport Accident Report

*Uddingston, June 17, 1957: British Railways, Scottish Region*

Colonel W. P. Reed, Inspecting Officer of Railways, Ministry of Transport & Civil Aviation, inquired into the accident which occurred at about 9.29 p.m. on June 17, 1957, at Uddingston, near Glasgow, when the 1.30 p.m. "Mid-day Scot" express, Euston to Glasgow Central, consisting of 12 corridor coaches drawn by the 4-6-2 engine *City of Birmingham*, became derailed when travelling at moderate speed over a trailing crossing. The wing rail had been forced outwards by one of the leading pair of wheels of the fifth vehicle, locked as a result of a mistake of a carriage and wagon examiner, who attended to the brake rigging at Carlisle, in which grooves had been worn in the middle of the tread of each tyre as it slid over the rails. This left a lip or "false flange" on the outside edge eventually deep enough for the lip on one wheel to descend below rail level in the gap in the nose of the crossing.

This fifth coach and five of the seven in rear were derailed and the last two severely damaged when they swung to the left some distance beyond the crossing and collided with loaded wagons in a siding. The engine and first four coaches were neither derailed nor damaged. The twelfth coach—the last—became separated from the eleventh by over 160 yd. and stopped jammed against a wagon in the siding. All coaches had direct admission vacuum valves, with Buckeye couplings between fifth, sixth and seventh and the last four and screw type elsewhere. (The report contains a full account of the damage sustained by the various vehicles with drawings showing the position of the various parts of the train, etc., after the derailment, the damaged crossing, details of the brake rigging, form of the grooves worn in the wheels and the position of the one concerned with respect to the rails at the point where it fell low enough to burst the crossing.)

One passenger was killed and four injured; the guard in the last vehicle, a brake van, fortunately escaped with slight injuries when the whole of its left side was torn away. Relief arrangements were made promptly and all the injured had left for hospital within half-an-hour; refreshments were provided and a bus service arranged to take passengers to Glasgow. There was considerable damage to permanent way and signalling equipment, but both up and down main lines were reopened during the following night. It was fine and still full daylight.

Permanent way at site of derailment was 95-lb. bull-head on wood sleepers with some 109-lb. flat bottom farther forward. The double line junction had been in service 20 years and was partly renewed in October, 1956; but the trailing connection in the down main, where derailment began, had not been replaced because of delays in supply of material. Wear in the wing rails and on the nose of the crossing was not, however, excessive and the relation between running surfaces was good. Nevertheless it had been decided that high speeds should not be allowed until it was renewed and a restriction of 35 m.p.h. was imposed in November, 1956. Maintenance was good; gauge and cross level on approach to the point of derailment were in order.

From Carlisle to Uddingston is 94 miles and includes the Beattock inclines ending at Carstairs; thence there is first a five-mile rise, followed by a continuous des-

cent, varying from 1 in 200 and 1 in 100, for 15 miles to Uddingston.

### Circumstances of the Derailment

By all accounts the train approached at the proper restricted speed. The damaged wheels had each a groove 8 in. long with maximum wear of  $\frac{1}{2}$  in. leaving a lip at the rim. Three only of the four pairs of c.i. brake blocks on the bogie were connected to the vacuum cylinder; those on the rear side of the trailing wheels were inoperative, as the draw rod of the bow girder had broken and been removed. Three only of the connected blocks could be found, one bearing marks of prolonged application to a turning wheel. The rear wheels were found warm some little time after, but the front ones, which had been sliding were not.

The brake cylinder had been isolated by a blank washer, to insert which a flanged connection to the vacuum branch pipe must be loosened, opening the underside to atmosphere. If this is done after vacuum has been created it applies the brake fully, as air passes through the pipe inlet to the lower side of the piston. After the connection is re-made and vacuum restored through the train the washer prevents air being sucked from the cylinder. The brakes will thus remain applied unless the cord is pulled to operate the release valve, opening the upper side of the cylinder to atmosphere. It was apparent that the piston had been left in full braking position.

The wing rail of the burst crossing was still held at the trailing end by the heel bolt and keys, but the through bolts at the nose and throat were broken and all crossing chairs ahead of the nose. As the two bolts might have been weak, allowing them to break when the deformed wheel was dragged past, they were analysed, but found to be sound though there were indications that the nose bolt had been loose at various times.

Skid marks on the running surface of the rails and scoring on the outer edges were seen as far as Motherwell,  $4\frac{1}{2}$  miles away, by the Chief Permanent Way Inspector, who found pressure marks on the V at previous crossings, though no damage had been done. He gave orders to examine the track to the Regional Boundary at Gretna Junction, a few miles short of Carlisle, and was satisfied there were intermittent skid marks over the whole length, similar to those he had found.

### Evidence

The train was 10 min. late at Carlisle and left 21 min. late, as a result of the work on the brake rigging of the fifth coach. A new crew took over the engine.

A carriage and wagon examiner saw the broken bow girder and summoned help to isolate the brake on the leading bogie. Detaching the broken draw rod, he tied the brake blocks to the back of the safety loops so that they would not swing against the wheels, while another examiner loosened the vacuum branch pipe connection. He helped the latter with this, in which there was some difficulty, and finally the washer was inserted and the flange screwed down. Both men scrambled clear, one on the side clear of the platform, where he watched the train depart.

Both admitted they failed to open the release valve. Motion of the vehicle,

caused through detaching at the rear of the train led the first mentioned examiner to call an inspector to apply the brake, but neither on this account, nor on any other grounds, did he try to excuse the omission or evade any responsibility at all.

Neither man heard or noticed anything untoward as the train left, but in fact the rear wheels of this bogie now were turning against a single pair of applied blocks and the front pair in all probability sliding. (An appendix to the report gives a brief description of the brake design and changes in brake pressure arising from the failure.)

The driver said the start was normal and, in all the circumstances it is understandable he noticed no extra drag. Nothing was noticed on the way to Carstairs.

During the 4-min. stop there a train examiner began his duty but he had only examined the first four coaches when the train started. He observed nothing wrong and said he would have noticed any sliding wheels and no signalman between Carlisle and Uddingston noticed sparks or other signs of such.

The journey was uneventful. The driver said he travelled over the junction at rather less than 35 m.p.h. and noticed nothing until vacuum disappeared. Some passengers in the fifth coach told the stationmaster, who organised rescue and relief arrangements with exemplary speed and whose wife provided immediate hospitality and refreshment to badly shaken persons, that running had become uneven after Carstairs and one pulled the communication chain just before the derailment. The chain broke there and failed to operate the valve, but was pulled in the restaurant car effectively, in any case only 2 to 3 sec. before the train pipe became severed.

### Inspecting Officer's Conclusions

The derailment was caused by the bursting of the trailing crossing. After the wheels began to skid the likelihood of this happening became greater at each successive such crossing as the groove in the tyre deepened, but the exceptionally acute angle of 1 in 20 at Uddingston was specially favourable to the forcing open of the wing rail; the wheel might well have sprung up on a normal angle crossing, say 1 in 10. Colonel Reed makes no criticism of the track, which appeared to be in excellent condition and is satisfied that the worn crossing was in every way safe for ordinary traffic, especially with the speed restriction.

Responsibility for failing to operate the vacuum release cord rests with the examiner who first noticed the defective equipment and the other should have checked that vacuum in the cylinder head had been released. No doubt they were hurrying to minimise the already appreciable delay to the train and may well have been disconcerted by its movement while they were at work.

It was not fully established where the wheels began to slide. It seems obvious, from material evidence, that they became locked at Carlisle, but they were not seen skidding there nor at Carstairs. Comparison with the wear on a pair which, with guard's hand brake left applied, skidded 90 miles from Aberdeen to Perth on November 13, 1956, suggests that they

slid only 45 miles. There are, however, many factors that could seriously affect such a comparison.

In a derailment in the U.S.A. in 1957, when a sliding wheel on a diesel-electric locomotive burst a crossing the  $\frac{7}{8}$  in. groove was similar to that found on this occasion; the wheel had been sliding for 40 miles but axle load was 23½ tons against 8½ on the coach involved at Uddington. In two other similarly caused derailments in the U.S.A. the groove was  $\frac{1}{2}$  in. after sliding 90 miles and  $\frac{1}{4}$  in. after sliding so for 32; relationship between wear and sliding distance is thus far from precise even when axle loads and wheel diameters are similar. On one of these two occasions the enginemmen had made an examination of the locked wheel from the track as the locomotive was moving slowly and failed to observe it was skidding.

Colonel Reed is sure the wheels were sliding on leaving Carstairs, 20 miles from Uddington, though the examiner said he was sure he would have noticed it had they been doing so; he believed they were in fact locked from Carlisle.

#### Remarks

Colonel Reed makes no recommendation with regard to the carriage and wagon examiner's fault. He understood his duties but overlooked one. He appeared to be a conscientious man and Colonel Reed feels sure he will not make such a mistake again. No doubt examiners understand the procedure involved in the work at Carlisle and need no special instructions but it may be appropriate to draw their attention to the serious consequences that can arise from an oversight such as this when working under pressure.

Bow girder breakages are rarely dangerous in themselves and there would have been no danger had this one been undetected. A full brake application probably would have caused the front wheels to skid but there would have been no other ill effect. It was right to remove the part which could be dismantled in the time available and isolate the brake.

The breakage was near the apex of the triangle where the tension members are welded to the draw rod, not easy to see during normal visual examination. This was in the zone of stress caused by flexing of the rod in service; fatigue may have helped to weaken the metal. There was, however, a distinct flaw, not attributable to fatigue, while heat during welding may have weakened the metal. Though bow girder failures occur from time to time it had not been thought necessary to record details of each fracture in the Scottish Region; one similar case had been noted in 1956 amongst 17 failures of various kinds in all types of such girders. The British Transport Commission is investigating incidence and causes of failure in this item so that improvements in design or manufacture can be made if this is considered necessary.

Failure of the communication chain in the fifth coach (which broke where it had become corroded near the outlet to the emergency valve) did not contribute to the severity of the accident, but it is unfortunate that in this serious emergency it failed to operate the valve. Instructions had been issued that the inferior type of chain—used during temporary shortage in supply of the standard form—should be replaced by the coiled spring pattern when stocks became exhausted. It has now been decided to replace with that whenever any coach concerned receives its periodical repairs.

## Questions in Parliament

### Agreed Economies on British Railways

Mr. Geoffrey Wilson (Truro—C.) asked on May 21 the Minister of Transport & Civil Aviation whether, in the light of the railway wages settlement, he would make a statement on steps which the B.T.C. had agreed with him to take to improve their financial position.

Mr. G. R. Strauss (Vauxhall—Lab.) asked at the same time what economies in the running of the railways were agreed upon between himself and the Chairman of the Commission in the discussions preceding the final wage negotiations.

Mr. Harold Watkinson replied to both questions together:

The general steps which the Commission is taking were set out in the Chairman's letter of May 2. These measures were put in hand on May 1 and have since been intensified. They will result in heavy cuts in services and thus reductions in manpower as the following examples show.

Cuts in train mileage, including the withdrawal of services on main line routes, will become effective on June 30 in the Western Region which plans to save nearly 100,000 train miles in total weekly; the London Midland Region has already made a reduction of 690 trains a week and will make further economies by 30th June.

Other Regions also are active and proposals to close unremunerative services which will come forward very shortly to Transport Users Consultative Committees include one from the Eastern Region, eight from the London Midland, nine from the North Eastern and fourteen from the Western.

I am seeing the Chairman of the Central Transport Consultative Committee this afternoon (May 21).

An approach has already been made to the Consultative Committee concerned for the withdrawal of the passenger service between Newhaven and Dieppe during the winter months and the Southampton/Havre service is under discussion.

Wagons are now being withdrawn from service at a rate of 3,000 per week.

I am satisfied that the Commission with the co-operation of the Unions has made a good start and I shall keep the House informed of further progress.

Mr. Wilson asked if it would be possible to give reports from time to time as to the actual progress made.

Mr. Watkinson: I shall be delighted to do that. At the end of my answer I said that I intended to keep the House informed.

Mr. Strauss: Can the Minister give an assurance that the many cuts he has now suggested will not, in fact, as a result, interfere with a good public railway service in this country? In view of the fact that the cuts are so extensive, the question arises in the minds of most Members who have listened to him today of whether our railway service is being severely damaged by the cuts he has announced.

Mr. Watkinson: I do not take that view, nor does the Commission. These cuts are part of the policy of streamlining our railway service to make it fit in with the 20th and not the 19th century.

### More Funds for Modernisation

Mr. Ernest Davies (Enfield E.—Lab.) asked the Minister of Transport and Civil Aviation on May 21 by how much it was proposed to increase the capital investment programme for railway modernisation for each of the years 1958 and 1959; how the totals to be authorised compared with those planned to be spent on the acceler-

ated programme of British Railways before the capital restrictions imposed in 1957; and by what year it was now anticipated that the modernisation programme will be completed.

Mr. Harold Watkinson: On the understandings described in my letter of 5th May to the Chairman of the B.T.C., the Government is prepared to authorise additional investment in railway modernisation of £25 million for the two years 1958 and 1959. This will make the total investment for the two years about £15 million more than the original estimates made by the Commission before the investment cuts were made, but less than the totals forecast in the regional budgets produced subsequently. There has been no change in the date forecast for the completion of the modernisation plan. Much of it is well ahead of schedule and the object of the increased capital investment which the Government is now prepared to authorise is to accelerate the more immediately remunerative items.

Mr. Davies: I welcome the fact that additional capital investment is to be permitted to enable the Commission to accelerate its modernisation plans, but it is most regrettable that these cuts were ever made in the first place, without adequate consultation with the Commission, which has put the Commission into a serious position.

Mr. Watkinson: No. The cuts were made after full consultation with the Commission. They were made as part of the Government policy to restrain inflation which has been notably successful. Now the Commission has come forward with a detailed "shopping list" showing how, for a certain amount of money, it can expedite the provision of things like diesel locomotives, and so on, which are immediately remunerative. Therefore, I think that the whole examination has been useful, and presents a solution which is in the best in all possible circumstances.

Mr. E. Popplewell (Newcastle-upon-Tyne W.—Lab.): Can we have an assurance that any expenditure in which the British Transport Commission has been involved in having to cancel trains and pay compensation will not now be a liability to the Commission, as a consequence of Government action?

Mr. Watkinson: I said that no such cases arise.

### Passenger Fares and Freight Rates

Viscount Hinchinbrooke (Dorset S.—C.) asked the Minister of Transport & Civil Aviation on May 21 what request he had received from the B.T.C. on the question of increasing passenger fares or freight rates to meet the cost of the recent offer of a wage increase; and what had been the nature of his reply.

Mr. Harold Watkinson, in a written answer: The Commission intends to meet by far the greater part of the cost of the wage increases by reductions in working expenses. The Chairman told me in his letter of May 2, that the Commission does not propose to make any general increase in fares or charges but will continue to adjust freight rates for selected traffics within its existing charging powers. It also intends to apply to the Transport Tribunal for fresh powers necessary if it is to be able to make limited increases on certain passenger services from time to time.

### Advances to Meet B.T.C. Deficits

Mr. R. Gresham Cooke (Twickenham—C.) asked the Minister of Transport & Civil Aviation if he would state the total amount of advances which he has sanc-

tioned to meet deficits on revenue account, to date, to the British Transport Commission under Section 1, subsection (1) (b) of the Transport (Railway Finances) Act, 1957.

Mr. Harold Watkinson, in a written reply: £127 million to meet the deficits up to March 31, 1958, of which £117 million relates to deficits before January 1, 1958.

#### Closing of Branch Lines

Mr. John Parker (Dagenham—Lab.) asked the Minister of Transport & Civil Aviation on May 7 what arrangements he had made for obtaining accurate figures from British Railways for the maintenance and running of branch lines which it was proposed to close.

Mr. G. R. H. Nugent, Parliamentary Secretary, in a written reply: My right hon. Friend proposes to have early discussions with the Chairmen of the Transport Users' Consultative Committees with a view to speeding up the procedure for the elimination of unremunerative services. These discussions will include the question of the information the Commission should submit in support of proposals to withdraw services.

Mr. Ernest Davies (Enfield E.—Lab.) asked the Minister of Transport & Civil Aviation on May 14 what steps he proposed to take to accelerate decisions on applications made by the B.T.C.

Mr. H. Watkinson, in a written reply: As the Joint Parliamentary Secretary (Mr. G. R. H. Nugent) informed the hon. member for Dagenham (Mr. J. Parker) on May 7, I propose to discuss with the chairmen of the Transport Users' Consultative Committees how the procedure for considering these applications can be speeded up. I also intend to consider with the Chairman of the Commission, acceleration of the rate at which applications come forward.

#### Underground Railway Coaches

Mr. Frank Beswick (Uxbridge—Lab. Co-op.) asked the Minister of Transport & Civil Aviation on May 15, what limit is imposed under his regulations, for safety purposes, on the number of persons to be carried in one coach on the underground railway.

Mr. H. Watkinson: No limit is imposed. My requirements ensure that an Underground coach is constructed to carry safely as many passengers as can occupy it.

#### Telephone Services at Railway Termini

Mr. R. Gresham Cooke (Twickenham—C.) asked the Postmaster General on May 14, at what intervals telephone instruments in call-boxes at London main line railway termini are inspected for faults.

Mr. K. Thompson, Assistant Postmaster General: A full inspection of these boxes is carried out on alternate days, and test calls are frequently made on other days by Post Office officials.

Mr. Gresham Cooke: Will my hon. Friend and, perhaps, his right hon. Friend the Postmaster General (Mr. E. Marples) make one of their famous tours by walking round and picking up the telephone instruments in the London railway termini, where I think it will be found that about one in every three is out of order at any one time? Is my hon. Friend aware that the general public generally do not report these faults and, therefore, they do not get picked up by the Post Office?

Mr. Thompson: If my hon. Friend has examples of where the telephones are not working, we will certainly look into them. We do, however, maintain the closest possible watch on them.

## Staff and Labour Matters

### London Busmen's Wage Claim

Discussions took place on May 23 between Sir John Elliot, Chairman of the London Transport Executive and Mr. Frank Cousins, General Secretary of the Transport & General Workers Union, in an attempt to find a basis on which to resume negotiations in connection with the dispute about rates of pay of London busmen.

Mr. Cousins was accompanied by the Assistant General Secretary of the Union and the Union's Bus Group Secretary.

Sir John Elliot had two other members of the London Transport Executive with him.

No progress was made at the discussions but both sides stated after the meeting that further talks could be held as soon as they seemed likely to serve any useful purpose.

The London Transport Executive insisted that the Union should accept the Industrial Court Award of 8s. 6d. a week to Central London bus crews only. The Chairman of London Transport has repeated the offer made before the strike to bring forward from the Autumn to the Summer the promised review of wages for Green Line bus drivers and certain other staff not covered by the L.T.E. wages offer. At the discussions the Union leaders pointed out that agreement for an all-round increase has been reached for railway workers and that the Retail Prices

Index has risen a further two points since the strike began.

On May 27, there was a meeting of senior officials in London of the Transport Passenger Section of the T. & G.W.U., the Road Haulage Section, and senior officers of the London Region, to examine the situation and to see what could be done to give support to the busmen. It was subsequently announced that Mr. Cousins had sent letters to the A.S.L.E. & F. and the N.U.R. pointing out that, because people who would normally use buses were travelling by Underground, the effectiveness of the bus strike was being weakened.

In their response to this, made on May 28, the two railway unions approached by Mr. Cousins reaffirmed their instructions to their members on the Underground, but gave no new orders to their members.

On the same day, May 28, the Minister of Labour, Mr. Iain Macleod, informed Mr. Cousins that he was not prepared to initiate fresh talks at present.

A special meeting of the Executive Committee of the Power-Workers' Group of the T. & G.W.U. has been called for May 31, at which a final decision will be taken on the extent of the measures the group is prepared to take to help the busmen. Plans have been made for mass meetings this weekend of the tanker drivers in London and the Home Counties to consider a strike call from union leaders.

## Contracts and Tenders

### Henschel wagons for Ghana Railway & Harbours Administrations

Ghana Railway & Harbours Administration has placed a contract with Henschel & Sohn G.m.b.H., Kassel, Germany, for 80 low sided wagons and 50 flat wagons.

British Railways, Eastern Region, has placed a contract for a single-screw diesel-propelled grab hopper dredger for use at Harwich with the Goole Shipbuilding & Repairing Co. Ltd., Goole. The main engines are to be supplied by Ruston & Hornsby Limited, and the grab crane is to be provided by Priestman Bros. Ltd., Hull.

British Railways, North Eastern Region, has placed the following contracts:—

A. Gunning & Company, Newcastle: provision of scullery with bathroom and larder in 49 staff cottages, Worsdell Street and Dale Street, North Blyth.

Conveyancer Fork Trucks Limited, Warrington: battery electric fork lift truck, Darlington Locomotive Works.

W. E. Hargrave Limited, York: provision of tea making urns and incinerators, York Headquarters Offices.

Modern Paviers Limited, Shipley: road repairs, York District.

Fairbank Brearley, Bingley: one spring scragging machine, Shildon Wagon Works.

W. & J. R. Watson, Edinburgh: extension to carriage washing and standing sheds, Heaton.

Purchases to be made by the Peruvian Corporation Railways from the \$15,000,000 loan made by the World Bank for the modernisation of the Peruvian Central and Peruvian Southern Railways, are to include 40 diesel locomotives, 36 passenger carriages and 275 wagons.

The Special Register Information Service, Export Services Branch, Board of Trade, has received calls for tenders as follows:—

#### From Pakistan:

495,000 hard and/or semi hard wood sleepers, 9 ft. x 10 in. x 5 in.

The issuing authority is the Ministry of Communications (Railway Division). The tender No. is 58/1720/7/S. Bids should be sent to the Joint Director, Civil Engineering, Railway Division, Room No. 311, 2nd Floor, Pakistan Secretariat Building, Karachi. The closing date is July 8, 1958. The Board of Trade reference is ESB/13293/58.

#### From Korea:

260,000 rail anchors, one piece with spring grip capable of holding a force of 8,000 lb.

750,000 base plates, high carbon steel 100,000 track spikes, high carbon steel ½ in. by 6 in.

The issuing authority and address to which bids should be sent is the Office of Supply, Government of Republic of Korea, Seoul, Korea. This purchase will be financed by the International Co-operation Administration (I.C.A.), the agency through which the United States Government gives economic and technical assistance to other countries. The closing date is June 26, 1958. The tender No. is 89-99-LI-8223. The Board of Trade reference is ESB/13422/58/ICA.

Further details regarding the above tenders, together with photo-copies of tender documents, can be obtained from the Branch (Lac House, Theobalds Road, W.C.1).

## Notes and News

**Holwell Wharf Goods Depot to Close.**—The British Railways, London Midland Region, goods depot at Holwell Wharf, between Melton Mowbray and Grimston, will be closed on June 2. Alternative arrangements for the traffic will be made at Melton Mowbray Town Station.

**High Duty Alloys Limited Glasgow Office.**—The address of the High Duty Alloys Limited Scotland and Northern Ireland Area Sales Office from June 2 will be: Atholl Avenue, Hillington, Glasgow, S.W.2: telephone, Halfway 5274; telegrams, High Duty, Glasgow.

**Derailment in Western India.**—More than 20 passengers are reported to have been killed and many injured when a passenger train of the Western Railway of India was derailed near Rajkot. The engine and the first three coaches left the rails, and the following five vehicles overturned. The train is stated to have been running on the metre-gauge line from Rajkot to Viramgam.

**Associated Commercial Vehicles Limited Interim Dividend.**—The Directors of Associated Commercial Vehicles Limited have declared an interim dividend for the year ending September 30, 1958, at the rate of 1s. 6d. per £1 unit of ordinary stock, that is 7½ per cent, less tax. The turnover and profit for the six months to the end of March, 1958, have fallen as compared with last year. Considerable rationalisation of production facilities has been effected and more is planned, but the benefits arising therefrom will not be fully apparent during the current year. Export orders have increased, but a revival in home demand is not yet in sight. The total order book shows little change from this time last year.

**E.A.R. & H. at the Mechanical Handling Exhibition.**—One of the features at this year's Mechanical Handling Exhibition at Earl's Court, London, on May 7-17, was an exhibit by East African Railways & Harbours portraying in model and photographic form the mechanical handling of

## Rolling Stock Exhibits at Inchicore



*Part of special display of C.I.E. rolling stock for the visit of Institution of Locomotive Engineers (see last week's issue); the nearest locomotive is a Metrovick 1,200 h.p. diesel-electric*

freight at Mombasa Harbour. The accompanying illustration shows Sir Arthur Kirby (left), Commissioner for East Africa in London, discussing the section of the model which indicates the layout of the new deep-water berths under construction on the mainland at Mombasa.

**Collision at Barry Dock.**—Ten passengers were treated in hospital after the 5.15 p.m. diesel train from Llanwit Major to Cardiff ran into the rear of the 5.30 p.m. diesel from Barry Island to Treherbert at Barry Dock on May 27.

**Additional Export Freight Service.**—British Railways, Eastern Region, is to extend from June 9 the export express freight service to cater for traffic from Sheffield and Rotherham to Hull and

Goole. The new service will be daily from Mondays to Fridays inclusive. It will cover all shipment traffic loaded at Sheffield Bridgehouses, Sheffield Wicker, Attercliffe, West Tinsley, Rotherham, and Broughton Lane; and it will also apply to traffic from private sidings controlled by any of the above mentioned depots.

**Butterley Co. Ltd. Results.**—The results of Butterley Co. Ltd. for the year ended 1957 show a group net profit of £7,597 after deducting losses on curtailment of civil engineering activities. This compares with £78,728 for the previous year. Fixed assets were £1,922,988 (£2,236,258) and trade investments £628,453 (£1,150). Current assets were £2,631,050 (£3,370,547) and liabilities £1,693,742 (£2,031,341), including £990,775 (£654,326) overdraft. Amount of reserve arising on coal nationalisation which can be regarded as available for distribution free of tax is £1,655,710, and there are balances of other tax free surpluses of £25,228.

**More Self-Help Luggage Barrows in N.E. Region.**—Last summer, the North Eastern Region of British Railways made available at Scarborough Central Station, as an experiment, self-help luggage barrows for the convenience of passengers unable to obtain the help of porters. The facility has proved very popular and the experiment is being extended. Barrows have already been supplied to Leeds, Central, Darlington, Whitby, Withersea, and Hornsea, in time for use by the Whitsuntide holidaymakers. As soon as more barrows become available, they are to be provided also at Bradford Forster Square and South Shields. A brief description of the barrow, with an illustration, was given on page 548 of our issue of May 10, 1957.

**Success of British Railways Container Ship.**—The new British Railways vessel *Container Enterprise* in its first four weeks of operation on the Heysham/Belfast service, from April 21 to May 17, carried 1,481 containers and 444 tons of other traffic. The ship can convey at least 65 large containers. British Railways,



*Sir Arthur Kirby discussing the model of Mombasa Harbour exhibited by E.A.R. & H. at the Mechanical Handling Exhibition*



Method of stowing containers in m.v.  
"Container Enterprise"

London Midland Region, is putting another similar vessel into service later this year to cater for growing traffic.

**Export Express Freight Service from Sheffield to Merseyside.**—British Railways, Eastern Region, recently introduced a new express freight train for export traffic between Sheffield and district stations and Liverpool and Birkenhead. The train is additional to the existing Liverpool services and runs on Mondays to Fridays inclusive, giving an early morning arrival at the ports on the day after despatch. The service covers traffic from the Sheffield goods depots at Wicker, Bridgehouses, Attercliffe, Darnall, and Wadsley Bridge, also from Rotherham, Kilnhurst and Chapeltown.

**Marcroft Wagons Limited Results.**—The results of Marcroft Wagons Limited for the financial year ended 1957 show a trading profit of £79,927, which compares with £62,962 for 1956. The net profit was £26,266 (£22,275), after tax amounting to £37,893 (£27,168). Capital increase expenses were £1,025 (£1,657). The dividend on doubled capital was 12½ per cent (10 per cent, plus 5 per cent bonus on old capital). Amount transferred to the general reserve was nil (£12,920), and £23,798 (£12,864) was carried forward.

**Paris Office of Thos. Cook & Son Re-modelled.**—The whole of the interior and the street-level fascia of the Paris office of Thos. Cook & Son Limited, at the corner of Place de la Madeleine and the Rue Royale, have been re-designed and modernised, with new decor, lighting, lifts, and furniture, as part of a re-building programme affecting many of the company's offices during a year which marks the 150th anniversary of the birth of Thomas Cook. At a recent gathering to celebrate completion of the reconstruction work, Mr. Stanley Adams Chairman of Thos. Cook & Son Ltd., recalled Cook's long association with Paris, since Thomas Cook first brought a party of English visitors to Paris in 1855 and established his first office there in 1874. Others present included Lord Rusholme, Sir

Ronald Matthews, and Messrs. C. P. Hopkins and E. Huskisson, Directors, and Mr. Charles Holt, General Manager, of Thos. Cook & Son Ltd., and Monsieur André Widloff, Cie. Internationale des Wagons-Lits.

**Railway Benevolent Institution.**—The annual meeting of members of the Railway Benevolent Institution will be held at Euston Station, London, N.W.1, on June 30, at 4 p.m. The business will be: (a) to receive the report of the Board of Management; and (b) to transact the ordinary business of the Institution.

**Beckett & Laycock Subsidiary in Australia.**—After the visit made by Mr. R. Antony Beckett, Managing Director of Beckett, Laycock & Watkinson Limited, of Acton Lane, N.W.10, last January and February to Australia and New Zealand, it is announced that the company has formed a wholly-owned subsidiary in Australia called Beclawat (Australia) Pty Ltd., incorporated in the State of Victoria. An existing engineering company with works in Melbourne has been acquired, and operations are now in train to develop the company in accordance with Beclawat potential in the Commonwealth of Australia.

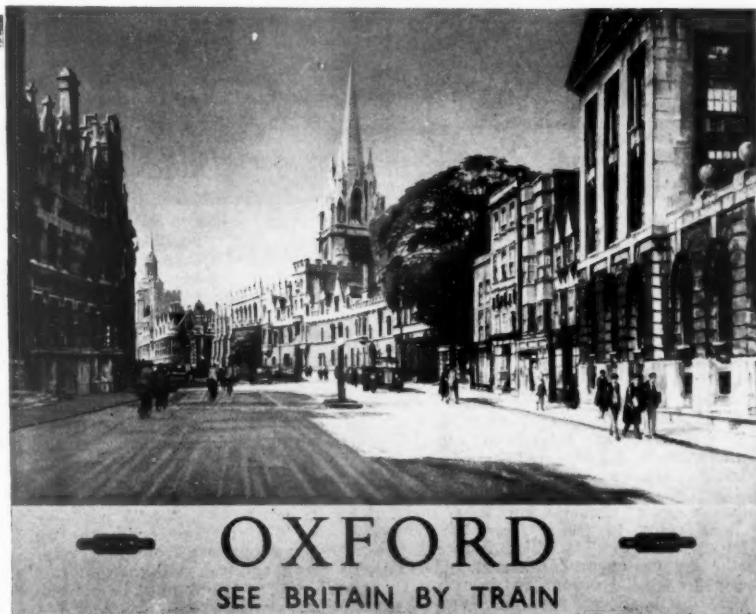
**Withdrawal of Passenger Service between Cudworth and Barnsley Court House.**—British Railways, North Eastern Region, announces that, because of the financial loss being incurred, the passenger service between Cudworth and Barnsley Court House will be withdrawn on June 9. Approval has been given by the Transport Users' Consultative Committee for the Yorkshire Area. Bus services operate in the area. An hourly diesel service was introduced in March between Leeds City and Barnsley Exchange via Normanton and Wakefield; this provides an improved

service for Barnsley passengers to the North who previously travelled via Cudworth. Parcels traffic will continue to be dealt with at both Barnsley Court House and Cudworth Stations.

**New Ship for Associated Humber Lines.**—One of six new vessels under construction for Associated Humber Lines Limited, of which this and two others are being built by A. & J. Inglis Limited, was launched last week at Pointhouse Shipyard, Glasgow, and named m.v. *Wakefield* by Mrs. J. R. Fewlass, wife of the Chairman & Joint Managing Director of Ellerman's Wilson Line Limited, with which the British Transport Commission is associated in Associated Humber Lines. Amongst those present was Mr. H. A. Short, Chairman of Associated Humber Lines Limited and General Manager, British Railways, North Eastern Region. The *Wakefield* is of some 1,300 tons deadweight, and is a single-screw vessel fitted with Ruston & Hornsby engines; it will have a service speed of 12½ knots. The design was prepared by the B.T.C. consultants, Messrs. Burness, Corlett & Partners, in conjunction with Associated Humber Lines technical staff. The ship will ply between Hull and Goole and near-Continental ports.

**Observation Cars in Scottish Region.**—Three observation cars are to be run this year over the most spectacular railway routes in Scotland. The provision of an additional car has enabled this facility to be extended to the Glasgow to Fort William line, and observation cars which proved popular last season between Glasgow and Oban and Fort William and Mallaig will run again this summer. From June 9, an observation car will be attached every weekday to the rear of the 10.21 a.m. train from Glasgow Queen Street station to Fort William, and will return on the

### Western Region Publicity



Poster by Carr Linford produced by the department of the Public Relations & Publicity Officer, British Railways, Western Region

4.38 p.m. from Fort William Mondays to Fridays and the 5.13 p.m. from Fort William on Saturdays. On weekdays a car will run between Fort William and Mallaig until September 13, in the 9.50 a.m. train from Fort William and the 6.20 p.m. from Mallaig. On Sundays the observation car will run from June 15 until September 14, at 10 a.m. and 2.45 p.m. from Fort William to Mallaig and at 12.20 p.m. and 5.30 p.m. from Mallaig to Fort William. Observation car facilities will be provided on the Glasgow-Stirling-Callander-Oban route every day until September 14, in the 7.55 a.m. train on weekdays and the 10.35 a.m. on Sundays from Glasgow Buchanan Street to Oban and the 4.45 p.m. on weekdays (5.15 p.m. from 9th June) and the 6.10 p.m. on Sundays from Oban to Glasgow.

**Vacu-Blast Limited New Address.**—Vacu-Blast Limited has moved into larger premises at Bath Road, Slough, Bucks (telephone: Slough 24507).

**John I. Thornycroft & Co. Ltd. Interim Dividend.**—The directors of John I. Thornycroft & Co. Ltd. have decided to pay the following interim dividends on account of the financial year ending July 31, 1958, less tax:—3 per cent on cumulative preference, 3½ per cent on participating preferred ordinary, and 3½ per cent on the ordinary shares.

**Permutit Co. Ltd. Results.**—The net profit for the financial year 1957 was £210,945, which compares with £248,663 for the previous year. Subsidiaries net profit was £96,042 (£25,324) and dividend 15 per cent. (same). Net current assets are £1,283,346 (£1,257,268) and reserves £1,216,243 (£1,075,177). Capital commitments are £57,000 (£30,000). It is proposed to increase authorised ordinary capital from £750,000 to 1½ million by creation of further 2 million 5s. ordinary shares.

**Photographers' Excursions in N.E. Region.**—Next Sunday British Railways, North Eastern Region, will run, for the first time, two day excursions specially for photographers to places of scenic beauty by the most picturesque routes, with stops or slow running at suitable points for photography. In connection with each trip a photographic competition has been organised and the local photographic dealers' associations are co-operating. One excursion will leave Hull for Whitby over the Yorkshire Wolds via Driffield and Malton, thence over the Whitby Moors via Pickering and Goathland to Whitby. The return from Whitby will be by the coast route. The second excursion will be from Bradford, calling at Shipley, Leeds City, and Normanton, through Peak District via Dore & Totley, Chapel-en-le-Frith, and Miller's Dale to Matlock. The return will be via Ambergate and Clay Cross.

**"Control Tickets" for Glasgow Fair Holiday Trains.**—A new system of regulating allocation of accommodation has been introduced by British Railways, Scottish Region, for some longer-distance trains to be run during the Glasgow Fair weekend on July 18-21. It will apply to trains from the four Glasgow termini. The object is to ensure that every passenger has a seat. During the first week the system was in operation 20,000 applications were received and passengers given their "train control tickets." Only those passengers in possession of a control ticket printed with

the train code will be permitted to join the train on these dates. An exception to the Train Control arrangement will be the "Caledonian" from Glasgow Central to Euston. First class accommodation in all trains will not be included in the arrangement and seats on advertised reservable trains may be booked in advance in the usual way.

**Hunslet Yardmaster.**—A 70-b.h.p., two-axle, 15-ton loco-tractor with this name has been evolved by the Hunslet Engine Co. Ltd., for metre, 3-ft. 6-in., and 4-ft. 8½-in. gauge tracks, and for speeds of up to 10 m.p.h. The new Hunslet single-stage hydraulic torque converter is the principal feature; also included are wide shunter's steps and driving controls so arranged that they can be operated either by a man standing on the steps or from the normal driving seats in the cab. The locomotive has a wheelbase of 5 ft. 5 in. and can easily negotiate curves of down to 60 ft. radius.

## Forthcoming Meetings

- June 3 (Tue.) to June 6 (Fri.)—Institute of Transport, 1958 Congress in Dublin.
- June 5 (Thu.)—Model Railway Club, at Caxton Hall, Westminster, S.W.1, at 7.45 p.m. Talk on "Famous railway accidents," by Mr. T. S. Lascelles.
- June 6 (Fri.)—The Railway Club, at Royal Scottish Corporation, Fetter Lane, London, E.C.4, at 7 p.m. Paper on "The Hastings direct line," by Mr. D. Cullum.
- June 7 (Sat.)—The Railway Club. Tour of lines in the West Midlands with special train of goods brake-vans over branch to Shipston-on-Stour.
- June 7 (Sat.) to June 12 (Thu.)—Permanent Way Institution Summer Convention at Weston-super-Mare.
- June 14 (Sat.)—Permanent Way Institution, Leeds & Bradford Section. Visit to Hull Docks.
- June 14 (Sat.)—Permanent Way Institution, East Anglia Section, at Ipswich. Film "Teeth of Steel," introduced by Mr. A. Stokes.
- July 17 (Thu.)—The Model Railway Club, at Caxton Hall, Westminster, S.W.1, at 7.45 p.m. Talk on "L.N.E. Cavalcade," by R. A. H. Weight.

## Railway Stock Market

Stock markets showed only moderate response to the cut in the bank rate to 5½ per cent, partly because this had been widely expected sooner or later, and partly because there is a good deal of caution in the City awaiting the outcome of developments in France. There are growing hopes that before long the bank rate will go down to 5 per cent, but on the other hand, the emphasis in official circles is that it is necessary to regard the bank rate as flexible and as likely to show a good deal more movement than in recent years. In fact, more cautious commentators argue that even if the bank rate were to be reduced to 5 per cent in the summer, it might be raised in the autumn, when our exports usually tail off and the £ tends to weaken. The inference is that we are probably a long way from the abolition of the credit squeeze, and that until this is possible, the outlook must be viewed with caution.

Business in foreign rails was on a small scale again, with Antofagasta ordinary and preference still under the influence of the

postponement of the preference dividend and changing hands around 12½ and 27 respectively. United of Havana second income stock was 6½ and San Paulo Railway 3s. units changed hands up to 2s. 3d. Costa Rica ordinary stock showed business up to 17. Paraguay Central 6 per cent debentures have been dealt in around 13.

Canadian Pacific were \$49½ and the 4 per cent debentures 64½ xd. Mexican Central "A" bearer debentures changed hands around 67. White Pass shares were \$14½ and in other directions, Peru Transport kept at \$½. Nyasaland Railway shares held the rise to 11s. 3d. having remained under the influence of the higher dividend.

Sentiment in shares of locomotive builders and engineers reflected the easier trend in engineering shares generally which were affected by the prospect of higher wage demands and increased costs. G. D. Peters were firm at 23s. 6d. "ex" the scrip issue. Beyer Peacock 5s. shares held steady at 8s. 4½d. and Charles Roberts 5s. shares at 7s. 6d. xd. Westinghouse Brake have been firmer at 38s. 9d. and in other directions, Gloucester Wagon 10s. shares were 14s. 9d. and Wagon Repairs 5s. shares 11s. 4½d.

Dowty Equipment 10s. shares, after receding on vague talk of a new issue, rallied to 32s. 6d. following the chairman's statement that the company have no new issue plans and that their programme this year can be financed out of existing resources. Elsewhere, Birmingham Wagon shares were 16s. 6d. at which there is a yield of over 12 per cent on the basis of last year's 10 per cent dividend. Business in North British Locomotive shares has been around 12s. Pressed Steel 5s. shares at 15s. 1½d. xd. were lower on the latest strike news. Among machine tool shares, Alfred Herbert were 33s. "ex" the scrip issue, and elsewhere, Craven Brothers 5s. shares strengthened to 7s. B. Elliott 1s. shares have changed hands around 2s. 10½d. In other directions, a feature has been buying of Birmid Industries' shares, which moved up to 63s. and British Aluminium were better at 38s. 6d. Tube Investments became firmer at 54s. 3d. Guest Keen were 53s. 3d. xd., but Vickers eased a few pence to 30s. 3d. and F. Perkins 10s. shares were dealt in around 10s. 1½d., on further consideration of the chairman's annual statement which indicated confidence in the future partly owing to the plan to widen the group's activities. Associated Electrical firmed up to 48s. 9d., English Electric were 52s. 6d. and General Electric 30s. 9d. Among other shares Henley's Telegraph 10s. shares were 12s. 3d. xd., and Johnson & Phillips 18s. 9d. xd. B.I. Cables were 43s. 3d. xd. and Crompton Parkinson 5s. shares steady at 9s. British Timken remained firm at 49s. 9d. Ruston & Hornsby were 25s. 3d. and T. W. Ward have been rather more active at 73s. 9d.

## OFFICIAL NOTICES

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